UNIVERSITY OF MARYLAND EXTENSION

# TPM/IPM Weekly Report

for Arborists, Landscape Managers & Nursery Managers

Commercial Horticulture — April 24, 2020

## In This Issue...



[Pest Predictive Calendar]

**IPMnet**
**Integrated Pest Management for Commercial Horticulture**

**extension.umd.edu/ipm**

If you work for a commercial horticultural business in the area, you can report insect, disease, weed or cultural plant problems **(include location and insect stage)** found in the landscape or nursery to sklick@umd.edu

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**Regular Contributors:**
Pest and Beneficial Insect Information: Stanton Gill and Paula Shrewsbury (Extension Specialists) and Nancy Harding, Faculty Research Assistant
Disease Information: Karen Rane (Plant Pathologist) and David Clement (Extension Specialist)
Weed of the Week: Chuck Schuster (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)

## Making The Diagnostic Process Easier

By: Stanton Gill , Karen Rane, Andrew Ristvey, Ginny Rosenkranz and David Clement

It has been working well with each of you sending in clear pictures of plant problems and setting up drop-off of samples at CMREC. Stanton and Karen both have microscopes at our homes so we can look at your samples under the scope and get back to you quickly. Dave, Karen, and I can get into CMREC if we need to use the lab equipment for a sample diagnosis. IPM scouts are doing a great job of letting us know what is going on in nurseries and landscapes.

We would like to add another feature to this field diagnosis process. On Tuesday, I (Stanton) had my first Facetime connection with a landscaper showing me a plant problem from the field. The picture quality was not fantastic with the lighting, but we made it work. If you want to diagnose a problem using Facetime, give me a call at 410-868-9400 so we can set up an appointment time. Facetime chews up the online minutes so we want to make it as efficient as we can. We can try this process out. I need people with a steady hand in the field and good lighting to make this work. I still prefer actual site visits and University Extension people can travel to sites while practicing social distancing if this phone diagnosis method does not work out.

Karen, David and I are working with LCA to set up a plant diagnostic session sometime this summer. More on this program in future IPM Alerts. Ginny Rosenkranz set up an online pesticide re-certification session for June 3. Information on how to register will be in upcoming IPM Alerts. Chuck Schuster is also setting up a session for June 12, 2020 that will be online.

## Cold Damage

By: Stanton Gill

In Central Maryland, Southern Maryland, and on the Eastern Shore of Maryland, we suffered a frost on Thursday evening (April 16) and again Saturday night (April 18). A third frost occurred on April 21 and a fourth on the night of April 22. Damage was evident on several different plants. I found damage on newly emerged growth on ginkgo. It is the first time I have seen this damage. We also are seeing damage on new growth on Japanese maples.

**Cold damage to newly emerged growth on ginkgo (left) and on Japanese maple (right)**
**Photos: Stanton Gill**

A cut flower grower in Federalsburg area (near Easton) reported cold injury on several species of woody plants. Richard Uva reports about 20% of paw paw blooms were damaged by frost this last week on the Eastern Shore. Marie Rojas, IPM Scout, found cold injury on *Cercidiphyllum* 'Claim Jumper' and 'Hannah's Heart', *Styrax obassia* tips, and *Magnolia* 'Jane' flowers this week in Montgomery County.

**Cold injury to *Cercidiphyllum* 'Hannah's Heart'**
**Photo: Marie Rojas, IPM Scout**

**Cold damage on *Magnolia* 'Jane'**
**Photo: Marie Rojas, IPM Scout**

Ben Beale, University of MD Extension Educator in St. Mary's County, reported that Southern Maryland did have frost. He reported damage on hydrangeas, but no detectable damage on peonies. Unprotected tomatoes had heavy damage. Strawberry growers had to put on row covers to prevent damage. Early sweet corn plants under plastic was still ok.

Andrew Ristvey, Extension Specialist, reported frost in Wye Mills on Saturday morning and freezing temperatures on Sunday morning. At the Wye Research and Education Center in Queenstown, the farm manager reported no noticeable damage to peaches or aronia so far. The strawberries on the ground may have received frost damage.

Joe Fiola, Fruit Extension Specialist, reported that temperatures reached 27 °F at the Keedysville Experiment Station resulting in damage on some of the early emerging genomes of grapes. He said an Eastern Shore vineyard reported damage on their wine grapes and they have not seen this damage in 20 years of growing. The extent of damage takes a week or two to assess.

Report on Grapes and Peaches from Joe Fiola:

*- On Friday a.m. and Sunday a.m. events; either or both caused damage.*
*- Cold, arctic air caused major frost events as far south as northern Georgia, North Carolina, Tennessee, and Virginia, New Jersey, and Pennsylvania also reported damage to grapes and peaches.*
*- Most of the freeze conditions were classic radiational cooling events, with lower elevations sustaining lower minimum temperatures and greater frost injury than higher elevations. Slight winds, some cloud cover, and low dewpoints mitigated frost injury in some locations.*
*- All regions of Maryland, including Eastern and Southern shores, reporting some damage. Some of the vineyards had never experienced frost/freeze damage*
*- Predominantly early budding cultivars.*
*- Especially hard or 2nd and 3rd year vines*
*- VSP more damage than high cordon*
*- Vinifera more damage that Hybrids (and table) but both hit*
*- Overall the damage is not severe and of course it will take time to see the extent of the damage, if the primaries recover and the clusters are still viable, or if we will be reliant on secondaries.*

Hardy Kiwis took a big hit this week with all new 2 – 3" growth being kill back by the cold.

**Cold damage on hardy kiwis**
**Photo: Stanton Gill**

**This was posted by the Penn State Experiment Station Extension:** *Cold temperatures on the morning of April 17, 2020, caused damage to some apple and pear orchards in Biglerville, Pennsylvania. Similar to what we reported for peaches yesterday, weather stations at the Fruit Research and Extension Center in Adams County showed that there was a strong temperature inversion about 5 a.m. with calm winds. The differences in air temperature caused by the inversion resulted in a wide range of crop damage estimates.*

*We noted that Pink Lady and Regal 10-45 had less freeze damage in rows adjacent to Fuji which were nearly 100% dead. Another interesting observation was that almost all surviving flowers of Golden Delicious were the "king flowers" in the center of the cluster.*

*Melanie Schupp examined all the flowers on 20 spurs each of several varieties and recorded the elevation in several blocks. Fruitlet death was evident by browning of the ovules. Some orchards in the region have reported no damage, while others are reporting severe damage. Growers are advised to cut some flowers and check for dark centers.*

*The PA State Experiment Station in Biglerville reported that Melanie Schupp had examined 160 peach fruit after the Aptil17th temperatures reaching a low of 27 °F by 5:00 a.m. She and growers are reporting clear cut injury to the developing ovules, with it being more prominent on certain peach cultivars depending on what stage of development they were in. Damage did occur on many varieties of peaches in southern PA.*

### Spruce Spider Mites

By: Stanton Gill

We are reaching the number of degree days for egg hatch of spruce spider mites, *Oligonychus ununguis*. Heather Zindash, IPM Scout, reported activity last week. Marie Rojas, IPM Scout, found more spruce spider mites (high levels) on *Cryptomeria* 'Yoshino' at a nursery in Montgomery County.

**Monitor spruce trees, as well as juniper, Leyland cypress, hemlock, and fir trees for spruce spider mites Photo: Heather Zindash, IPM Scout**

The first stage that will be hatching very soon, a six-legged larva, is salmon-colored until it has fed for a short time. After feeding, the larva and all following stages are generally green or dark red. The eggs are rounded and vary from tan to red (overwintering eggs). Each egg has a single hair-like stipe on the top, which can be used to distinguish spruce spider mite eggs from other spider mite eggs that may be found on conifers. They are common on spruce but can be found damaging Leyland cypress, junipers, hemlocks, and firs.

**Control:** Control is best on smaller trees under 20 ft tall. I would use a horticultural oil on all but blue spruce and firs. It takes out the waxy layer that gives the color on blues spruce and sometimes damages fir foliage. The other options are mitcides such as Avid and Sanmite. The mite growth regulator, Hexagon, has provided excellent control of the larval stage of spruce spider mites in our field trials and is very soft on beneficial organisms.

Can you obtain effective on larger trees? It depends on if your sprayer can put a nice fine mist up to the upper branches and obtain good coverage. This coverage is difficult without drift issues.

### Landfill Problems for Landscapers

By: Stanton Gill

Tony Murdock, Fine Pruning, let us know that Frederick County Landfill is only allowing commercial enterprises to enter. No residential. They accept Frederick County debris only.

## Ambrosia Beetles

By: Stanton Gill

Cold weather continued last weekend and we have had very little flight activity this week with *Xylosandrus* species of ambrosia beetles. This situation continued through Thursday with frost on Tuesday and Wednesday nights followed by cool, windy, and rainy weather, all of which has reduced flight activity for ambrosia beetles. Marie Rojas, IPM Scout, did not find any beetles in a trap in Montgomery County on April 123. If anyone finds wet areas on their tree trunk or frass piles give me a call at 410-868-9400.

## Rose Diseases Visible Now

By: Rachel Ross and Karen Rane, UMD

Two common rose diseases can be found now on hybrid tea roses.

**Black spot** is one of the most common diseases of rose. The name of this disease accurately describes the symptoms. Infected leaves develop black lesions, typically on the upper surface (Fig. 1). Lesions may be circular or irregularly shaped with feathery borders. Yellowing can occur at leaf margins and continue to full chlorosis of the leaf (Fig.2), followed by leaf drop.

Management of this common disease in landscapes requires a combination of approaches. Planting resistant rose cultivars is the best way to reduce this disease. Proper sanitation (fall cleanup and removal of infected material throughout the season), and reducing leaf wetness (proper spacing, implementing drip irrigation as opposed to sprinkler or overhead) are also essential measures. Repeated fungicide applications are often necessary to protect the foliage on highly susceptible hybrid tea cultivars (an excellent reason for planting resistant cultivars!). A number of products, including mancozeb, triforine, strobilurins, myclobutanil, chlorothalonil and thiophanate methyl, are labeled for managing this disease. It is important to always follow label instructions as well as rotate fungicides with different modes of action to reduce development of resistance. The Missouri Botanical Garden has additional information on management of black spot.

**Fig. 1: Black spot lesions on upper leaf surface**
**Photo: R. Ross UMD**

**Fig. 2: Chlorosis (yellowing) on leaves infected with the black spot fungus.**
**Photo: R. Ross UMD**

Symptoms of rose mosaic disease are also developing now on roses. The disease is caused by a number of plant viruses, including Apple Mosaic Virus (AMV) and Prunus Necrotic Ringspot Virus (PNRV). Symptoms on the foliage range from mottle, mosaic, vein banding, and ring spots. Infection may also impact flowering and can make plants more susceptible to winter injury.

The viruses that cause rose mosaic are transmitted through grafting. There are no known insect vectors for rose mosaic.  Virus diseases are systemic, so removal of symptomatic leaves or stems will not rid the plant of the virus. There is no control for rose mosaic in the landscape and heavily impacted plants should be removed.

**Fig. 3: Symptoms of rose mosaic include chlorotic line patterns on leaves.**
**Photo: R. Ross UMD**

**Fig. 4: Leaf mottle due to rose mosaic.**
**Photo: R. Ross UMD**

## Woolly Elm Aphids

Marie Rojas, IPM Scout, found woolly elm aphids on *Ulmus* 'Princeton'. These aphids produce waxy secretions giving them a fluffy cottony appearance that serves as a deterrent to predators. Look for woolly aphids on the undersides of leaves of distorted tip growth. There are a number of natural predators like lacewings, lady beetles, hover flies and parasitic wasps that feed on these aphids. If necessary, to reduce large infestations, insecticidal oil or soap sprays in the spring can be used.

**Woolly elm aphids cause leaves to curl**
**Photo: Marie Rojas, IPM Scout**

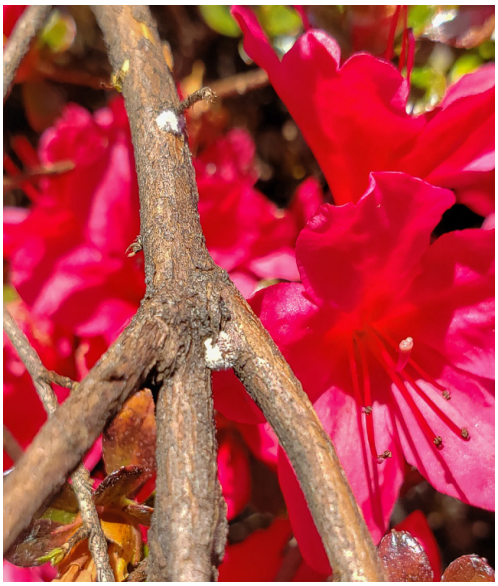
## Scale Update

Marie Rojas, IPM Scout, found **Maskell scale** on cryptomerias. The first generation of crawlers will be in June. Maskell scale has three generations. **Cryptomeria scale** was active on *Abies koreana* 'Horstmann's Silberlocke'. The first of two generations will be in June and July. Marie also found **calico scale** on *Carpinus betulus*. The nymphs of this scale feed from June through September. The activity of these scale insects is in Montgomery County.

**Japanese Maple Scale:** Elaine Menegon, Good's Tree and Lawn Care, found Japanese maple scale on zelkova in Lancaster, PA on a new client's property. Elaine noted that she recommended removal of the tree because it was half dead. Jim McWilliams, Maxalea, Inc., found a heavy infestation on Holly 'Nellie Stevens' in the Baltimore area. Treat with oil now and come back at crawler stage (late May/early June) and treat with Talus or Distance. Monitor for the second generation in late summer. See our fact sheet on Japanese Maple Scale and a plant host list. For heavy infestations, it might take a year or two to bring the population down.

**Holly 'Nellie Stevens' showing damage (left)from Japanese maple scale and the scale covering the trunk (right)**
**Photos: Jim McWilliams, Maxalea, Inc.**

Kevin Nickle, Scientific Plant Service, found **azalea bark scale** this week. This scale can also be found on andromeda, rhododendron, and occassionally ornamental cherry trees. Look for plants that appear chlorotic and unthrifty. Infested plants are often covered with sooty mold that grows on the honeydew excreted by the azalea bark scales as they feed. Eventually twigs may die back. Crawlers are active in Maryland in May to early June. There is a second generation that produces crawlers in late June through mid-July. If the population is low and damage is minimal, look for beneficial insects which do a good job controlling this insect. If necessary, apply a dormant spray for overwintering nymphs on twigs. In summer when crawlers are active, you can use a summer rate (0.5 – 1.0%) of horticultural oil for control.



**Look for crawlers of azalea bark scale in May to early June**
**Photo: Kevin Nickle, Scientific Plant Service**

## Pine Bark Adelgids

Marie Rojas, IPM Scout, found pine bark adelgids at the base of new shoots of white pine. Marie noted that lady beetles were already feeding on them. This adelgid overwinters as nymphs on the bark of its hosts. Pine bark adelgid has several generations per year.
**Monitoring:** Visually monitor the bark and larger branches of pines for fluffy white wax. It often starts at the base of needles. Black wingless adults will be within the wax along with yellow eggs. Trees can generally tolerate relatively high levels of this pest.
**Control:** Pine bark adelgids are often kept at low populations by a number of different generalist predators (flower fly larvae, lady beetles). Horticultural oil can be applied now or at most times of the year to reduce populations of adelgids. The horticultural oil should help conserve the natural enemies to help prevent adelgid populations from returning to high levels. Wait for egg hatch if you decide to apply a chemical.

**Various predators, including this lady beetle, feed on pine bark adelgids**
**Photo: Marie Rojas, IPM Scout**

## Sycamore Assassin Bug

By: Gerald Brust

This fascinating looking bug, which was sent in by Max Paquin for identification is the sycamore assassin bug, *Pselliopus* sp. a member of the Assassin bug family, Reduviidae. It can give a nasty bite if mishandled, but the bite is not considered dangerous—it just hurts. Assassin bugs typically feed on other insects that are attracted to flowers. The adults overwinter each year and become active in late spring. Females lay eggs in small clusters on the underside of leaves. The eggs hatch and the little nymphs feed on tiny insects. They will become adults by September. These new adults overwinter in leaf litter, bark of trees, or even in buildings (typical of this particular species).

**Sycamore assassin bugs often feed on insects attracted to flowers**
**Photo: M. Paquin**

## Boxwood Blight 2020

By: Karen Rane and David Clement

Anyone caring for boxwoods should be constantly on guard for the symptoms of boxwood blight. This fungal disease, first detected in 2011, has caused significant losses in nurseries and landscapes. There are two resources that can help in the fight against this disease. The first resource is Virginia Tech's Boxwood Blight Task Force Website (https://ext.vt.edu/agriculture/commercial-horticulture/boxwood-blight.html) where you can find information on all aspects of the disease. Symptom photos, best management practices, and lists of sanitizers and fungicides can all be found here. A recent addition to the site is a decision guide for managing boxwood blight in landscapes.


**Boxwood blight cankers**
**Photo: David Clement, UME**

The second tool is the Boxwood Blight Risk Model app , available through the App store or online at https://uspest.org/risk/boxwood_app. This risk model suggests when environmental conditions are favorable for infection in an area, using local weather station data on temperature and rainfall. While the model is still under development, it may help landscapers with timing of protectant fungicide sprays. In general, temperatures between 60-85 °F with several hours of continuous leaf wetness are favorable for infection. **So far, the model has shown primarily low risk for infection in our area, due to recent cooler than normal temperatures, but if you are using this model, consult it daily as forecasts can change.**

**Boxwood blight leaf spots**
**Photo: David Clement, UME**

**Boxwood shrub infected with boxwood blight**
**Photo: David Clement**

## Fruit Tree Insect Update

By: Stanton Gill

**Here is a picture of pear development this week in central Maryland.** Plum curculio will hit this stage of the pear. Make sure your customer puts on their protection this week. Apples are still in bloom this week and fruit formation should start next week. Same thing for the plum curculio protection. Paw paws are just starting to open this week in central Maryland. The flowers are dark purple and very attractive in their own dark way.

**Bloom time of pears when plum curculio will start feeding (left) and the attractive, dark purple flowers of paw paw trees (right)**
**Photos: Stanton Gill**

## Powdery Mildew is Prevalent

Paul Wolfe, Integrated Plant Care, called Wednesday night to let us know powdery mildew is rampant on euonymus foliage and he found it covering rose plants in the Bethesda area. Marie Rojas, IPM Scout, is also finding powdery mildew on VENUS dogwood (*Cornus* 'Kn30 8').

**Powdery mildew is infecting this VENUS dogwood (*Cornus* 'Kn30 8)**
**Photo: Marie Rojas, IPM Scout**

## The Difficulties of Lowering Soil pH

By: Andrew Ristvey and Stanton Gill

The soil pH in Maryland ranges from acidic to alkaline, depending on what part of the state you are located. Occasionally I get an inquiry about lowering soil pH for ericaceous plants like blueberries or azaleas. Elemental sulfur is the least expensive material and most commonly used. However, the soil reaction to sulfur is slow and quick changes in soil pH should not be expected. It may take up to a year to change soil pH to the desired level because the process of sulfur oxidation (conversion of elemental sulfur to sulfate) is the result of microbial activity. Since the oxidation of sulfur is the result of microbial activity, fall and winter applications are not advisable (it can be done but changes in soil pH will not occur).

If the soil is calcareous (contains free calcium carbonate), additional sulfur will be required to neutralize the free calcium carbonate. To neutralize a soil that contains 2% calcium carbonate, for example, requires 6 tons of sulfur per acre (this only neutralizes the calcium carbonate; additional sulfur will be needed to affect a change in soil pH). Obviously, it would be impractical to apply enough elemental sulfur to alter soil pH of calcareous soils on a field scale. On a small landscape job, it might be possible.

Rates of applied sulfur are based on the initial and target pH. Soil type is also an important component to calculating the rate. Clay soils require more sulfur to lower pH than soils with less buffer capacity, like sandy soils. For instance, to lower a pH of 7.5 to pH 5.5 would require 20 lb sulfur/1000 sq ft in a sandy soil but in a clay loam soil, 35 lb sulfur/1000 sq ft would be needed. A clay soil would need 60 lb sulfur/1000 sq ft for the same 2 point pH change. Cation Exchange Capacity (CEC), indicative of a soil's buffering capacity, can be used for more accurate application rates (see footnote*). Often, reapplication of sulfur is needed yearly to maintain low soil pH.

Another method to maintain low soil pH, is the application of an organic or acid fertilizer. These have a predominance of ammonium or urea nitrogen, which can be applied around the base of the landscape plants. While much of this form of nitrogen is converted to nitrates by soil bacteria, the conversion creates soil acidity while the root uptake of ammonium nitrogen also decreases soil pH. In contrast, applying a nitrate-based nitrogen fertilizer can increase soil pH. This is why ammonium-based fertilizers are preferred when feeding ericaceous plants. They keep the soil pH low. It is true that nitrate is most available between the pH of 4.5 and 6, and ammonium is more available in soils with a more neutral pH.

Furthermore, while azaleas and other ericaceous plants such as blueberries will take up nitrates, they do not use it efficiently. This is because these plants have very little nitrate reductase activity. In order for nitrate nitrogen to be useful (turned into amino acids), it needs to be converted to ammonia inside the plant. Nitrate and nitrite reductases are the plant enzymes that do the conversion. Ericaceous plants have very little reductase activity. How did this come about? Well interestingly, nitrate reductase contains molybdenum. Molybdenum is not available in acid soils, where ericaceous species have adapted. Without the molybdenum availability, nitrate reduction cannot occur. This is why ammonium based fertilizers are best for fertilizing acid-loving plants.

* more information about changing soil pH is found at this link, along with a chart for sulfur application (lb per 100 sq/ft) based on present pH and CEC, and target pH.
http://spectrumanalytic.com/doc/library/articles/soil_ph_management

## Apple Disease Alert

By: Kari Peters, Penn State

The 2020 season is shaping up to be very interesting, as well as challenging. Based on our current conditions and the forecast, we may experience a protracted bloom this season for a large part of the apple growing region. Growers need to be on alert since this is the time frame for many important diseases to do damage. April 23 – 26 will be an important apple scab infection event. Apple scab spores are peaking (the maximum number of available spores dispersing from the overwintering leaves) during bloom through petal fall. April 23 – 26 will be an important apple scab infection event. Growers should remain on high alert the week of April 27 if the forecasted rain events manifest.

Marssonina blotch has been wreaking havoc the last several years, defoliating trees prematurely. Our preliminary data from 2019 suggests bloom through petal fall is an important time and FRAC Group 7 fungicides work the best. We have preliminary data suggesting bloom could be a critical time to start bitter rot management. During our bitter rot studies the last few years, we have discovered there are multiple species of Colletotrichum causing bitter rot in apples. Many Pennsylvania growers have been experiencing bloom since mid-April. Fortunately, the cool temperatures are not favoring fire blight development.

## Girdled Tree

Jim McWilliams sent in photos of a girdled Leyland cypress tree where the tree supports were not removed. Jim noted that they find homeowners and landscape contractors are not taking the time to go back and remove stakes, wire, hose, and even chain loc, which can cause serious trunk girdling. Jim noted that he took off what he could, but the damage is done.

**It is important to remove the support materials from trees to prevent girdling damage**
**Photo: Jim McWilliams, Maxalea, Inc.**

## Red Bud Problems

By: Stanton Gill

The eastern redbud (*Cercis canadensis*) grows throughout most of the eastern U.S, extending as far west as Oklahoma and Texas and north into Canada. This tree is not picky when it comes to soil preference, but it does best when grown in a moist, well-drained location. Redbuds look great at this time of year, but there are problems. Some people are reporting that redbuds are not leafing out this year and many have dead branches. The impact of the record wet year in 2018 and the wet spring of 2019 followed by the drought is now showing up as dieback on redbud. I published pictures of stressed redbuds in September and October. This spring, we are seeing the effect of the wet period followed by exteme dry periods. Similar to what we saw with the white and red oaks last fall. Karen Rane noted the redbuds are susceptible to trunk cankers and Botryosphaeria canker. Fungicides are not effective in controlling Botryosphaeria.

## Beneficial of the Week

By: Paula Shrewsbury

**Another plant bug that eats lace bugs, *Rhinocapsus vanduzeei***

This is the time that most azaleas are showing their beautiful flowers! It is also the time that lace bugs are becoming active on their host plants (ex. azalea lace bug on azaleas, andromeda lace bug on andromeda, hawthorn lace bug on pyracantha, cotoneaster, and hawthorn, etc.). Last week we discussed the predacious Japanese plant bug, *Stethoconus pyrioides*, which feeds on multiple species of lace bugs. We also referred to the very tiny parasitic wasp, *Anagrus takeyanus*, that specializes on lace bug eggs. Today I will discuss another predacious plant bug, the **azalea plant bug**, ***Rhinocapsus vanduzeei***, that we commonly see on azaleas.

**An azalea plant bug, *Rhinocapsus vanduzeei*, adult (~3.5mm) which are common on azaleas. Photo: Marie L. Schmidt, Bugguide.net**

*Rhinocapsus vanduzeei* is a true bug (order Hemiptera) and belongs to the family Miridae. Insects in this family are known as plant bugs. Its distribution is believed to be everywhere azaleas are found. *Rhinocapsus* also occur on other plants in the Ericaceae family (ex. Rhododendron, Kalmia), raspberries (Family Rosaceae), and plants from several other families. *Rhinocapsus* adults and nymphs are red and black. Adults are about 3.5mm long, their wings are held flat over their body, and the front wings are half thickened and half membranous. They overwinter as eggs in the stems of azaleas, egg hatch occurs around azalea bloom, there is one generation per year, and adults are active in the spring through mid-summer. They are usually done by mid-July. *Rhinocapsus* is frequently observed but most people are not sure what they actually are doing on the azaleas. They seem to do a little of everything. *Rhinocapsus* are omnivores so they feed on prey and pollen and nectar. *Rhinocapsus* has been observed feeding on the azalea lace bug, whiteflies, leafhoppers, aphids, small flies, thrips, fall armyworm eggs and larvae, two-spotted spider mite, azalea leafminer pupae, each other, and azalea flower parts. Research out of Dr. Kris Braman's lab (UGA) indicated that *Rhinocapsus* is an effective natural enemy of lace bugs. In addition, they have an annoying habit of trying to "taste" people using their piercing-sucking mouthparts. There have been many reports by azalea enthusiasts, including me, of

being “bitten” by this small bug. Bill Miller of *The Azalea Works* shared he often “feels” *Rhinocapsus* before he sees them (click here to see more detail in Bill’s article). It is not clear if the bug feels the need to defend itself from large humans or if it is just hungry and exploring possible meals. Given all of this information I guess we would call *Rhinocapsus* a beneficial… unless you are the one being “bitten”.


**An azalea plant bug, *Rhinocapsus vanduzeei*, nymph.**
**Photo by: Jim Baker, North Carolina State University, Bugwood.org**

## Weed of the Week

By: Chuck Schuster

Weeds across the area are really taking off. Moisture and up and down temperatures are creating havoc in the weed world. Several rains during the week have kept our soils very moist which can create problems for pre-emergent herbicides if the moisture levels stay very high.

**1. On warmer, protected sites, annual bluegrass may continue to grow like a perennial**
**Photo: Chuck Schuster, UME-Retired**

Out surveying turf this week, I saw a fair amount of annual bluegrass. Annual bluegrass, *Poa annua*, is a common weed in this region and the United States, and is noticeable to anyone looking out over a turf site. It stands out with its off-color of green in the turf. It can also be found in landscapes. Annual bluegrass is an **annual**, usually classified as a winter annual, though the location of the site can change this characteristic in some regions. It easily survived the winter we recently experienced, which was very mild overall. As can be noted in photo 3, it stands out in a lawn. Its different color and texture make it discernable. Most winter annuals will die soon after seed production in the spring, but on warmer protected sites, it may continue to grow much like a perennial (photo 1). Annual bluegrass is noticed as it grows in an erect or small clump (photo 2). It tolerates close mowing heights, but can reach heights of nearly one foot in landscapes and unmanaged turf. Its ability to adapt to close mowing takes away one method of cultural control - that being mowing low. One distinctive characteristic is the “boat-shaped” tip that the leaf blades form. The blades of this grass will present without hairs and are narrow but long. Blade dimensions can reach four inches in length and one eighth inch in width. Annual bluegrass prefers a moist to wet soil, which started very early in the winter and has not stopped yet.

**2. Annual bluegrass grows in an erect or small clump**
**Photo: Chuck Schuster, UME-Retired**

No single method of control works on annual bluegrass. It should be noted that the cultural control method of mowing height does not provide any control. Annual bluegrass control starts with moisture control as one of the cultural methods used to prevent this weed. This method is difficult when normal precipitation does not seem to slow down very much. Preventing areas of the turf from being overly wet is the objective. Moving downspout

splash blocks to prevent puddling is useful, but sometimes difficult. Using irrigation water carefully can help manage this grass, especially in shady areas. Compaction is another condition that creates the ideal site for annual bluegrass. It is recommended not to aerate during the germination period for annual bluegrass (fall germinating). While collecting clippings is not usually recommended, if you have an area with a substantial stand of annual bluegrass, consider collecting the clippings during seed production periods to reduce the seed bank for the following fall.

**Annual bluegrass tolerates close mowing heights Photo: Mark Schlossberg, ProLawn Plus, Inc.**

Prevention is always the best method of control. Clean mulches in landscape settings using a weed barrier beneath. In turf settings, prevention of seed movement to a site on mowers by cleaning is one good measure that anyone can use. Early detection and elimination is the next line of defense. Rogue out when possible. Chemical control in landscape settings includes prodiamine (Factor, Barricade), oxadiazon (Ronstar), benefin/oryzalin (XL), benefin/trifluralin (Team), and Surflan as pre-emergent products.

In turf, monitor soil temperatures and when the daytime high **drops to 75°** F for four consecutive days, consider applying a pre-emergent product. Pre-emergence herbicides that are noted to provide good control of annual bluegrass are benefin (Balan), dithiopyr (Dimension), oryzalin, pendimethalin, and prodiamine (Barricade). Post emergent control can be obtained using ethofumesate products (Prograss). Non selective post emergent control can be easily obtained using glufosinate (Finale), glyphosate products, and any of the fatty acid products or citric acid products including Prizefighter, Avenger, and Pulverize. Remember that pre-emergent failures are often the fault of improper application timing (late). Additionally we find that the nitrogen added to turf, with the additional moisture may have allowed the microbial degradation to be faster than normal. This weed being a winter annual should have pre-emergent products applied in the August and September timeframe.

## Plant of the Week

By: Ginny Rosenkranz

*Phlox divaricata* or woodland phlox is a beautiful native herbaceous perennial that blooms in the spring from late April into May. Unlike *P. subulata* and P. *paniculata* which need full sun, *P. divaricate* thrives in bright partial to full shade. Like all phlox, woodland phlox needs organically rich, moist, but well drained soils and a light covering of mulch to keep the roots cool. Plants are cold tolerant in USDA zones 3-8, and when in bloom, attract both hummingbirds and butterflies including the swallowtail butterfly and the hummingbird moth. The plants grow 12-15 inches tall and wide and spread slowly by creeping rhizomes. Woodland phlox also spreads into colonies by sterile stems that don't produce flowers, but instead bend to the ground and form roots at each node. The fertile stems produce flowers that are in shades of icy to deep blues, lavenders, and light purple. The 1 ½ inch fragrant five petal flowers flair from a narrow tube and

***Phlox divaricata* 'Blue Moon' does well in partial to full shade**
**Photo: Ginny Rosenkranze**

are clustered together in a loose panicle or bouquet that is held above the foliage. There are new cultivars including *Phlox divaricata* 'Blue Moon' that has fragrant deep violet blue flowers and 'May Breeze' that has fragrant pale blue to white flowers. The green or purple stems can have sticky glandular hairs which may be why deer don't find them appetizing. Lance-shaped leaves are dark green through the summer and are broader on stems that don't produce flowers. Plant this lovely native perennial in cottage gardens, woodland gardens, and butterfly gardens. Pests include powdery mildew, spider mites, and rabbits.

**Close-up of Phlox 'Blue Moon' flower**
**Photo: Ginny Rosenkranz**

## Pest Predictive Calendar "Predictions"

By: Nancy Harding and Paula Shrewsbury

In the Maryland area, the accumulated growing degree days (DD) this week range from about 117 DD (Aberdeen) to 304 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 22)

| | | |
|---|---|---|
| Aberdeen (KAPG) | | 117 |
| Annapolis Naval Academy (KNAK) | | 185 |
| Baltimore, MD (KBWI) | 225 | |
| Bowie, MD | | 262 |
| College Park (KCGS) | | 196 |
| Dulles Airport (KIAD) | 225 | |
| Frederick (KFDK) | | 184 |
| Ft. Belvoir, VA (KDA) | | 255 |
| Gaithersburg (KGAI) | | 193 |
| Greater Cumberland Reg (KCBE) | 159 | |
| Martinsburg, WV (KMRB) | | 144 |
| Natl Arboretum/Reagan Natl (KDCA) | | 304 |
| Salisbury/Ocean City (KSBY) | | 242 |
| St. Mary's City (Patuxent NRB KNHK) | | 300 |
| Westminster (KDMW) | | 221 |

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 |
|---|---|---|
| *Deutzia gracilis* 'Nikko' | First bloom | Bowie (April 19) |

## CONFERENCES

**June 3, 2020**
Eastern Shore Pesticide Recertification Program
Location: Chesapeake College, Wye Mills, MD
There will be an on-line program

**June 20, 2020 - Has been postponed until 2021**
Maryland Christmas Tree Association Summer Meeting

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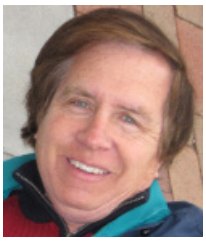

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Thank you to the Maryland Arborist Association, the Landscape Contractors Association of MD, D.C. and VA, the Maryland Nursery, Landscape, and Greenhouse Association, Professional Grounds Management Society, and FALCAN for your financial support in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

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