

Commercial Horticulture

July 12, 2019

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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 for Nursery, Greenhouse and Managed Landscapes, sgill@umd.edu. 301-596-9413 (office) or 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 (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)

Cannibalistic Predators

By: Stanton Gill

Marie Rojas, IPM Scout, sent in some pictures of lady bird beetle larvae feeding on eggs in the cluster from which they hatched. I put these pictures out to entomologists across the US and received responses noting that this activity is common. Robin Rosetta sent in a picture from Oregon with a larvae feeding on its sibling's egg. You know how you always wanted to secretly push your brother or sister down the stairs when your parents were not looking? Sibling rivalry is very common, even in the insect world. The first ones hatching out sometimes take out the competition.



Recently hatched lady bird beetles are feeding on unhatched eggs
Photo: Marie Rojas, IPM Scout

A lady bird beetle larva is feeding on an unhatched egg
Photo: Robin Rosetta, Oregon State University



Impatiens Downy Mildew

By: Rachel Ross and Karen Rane, UMD Plant Diagnostic Lab

Impatiens downy mildew (caused by the fungus-like oomycete *Plasmopara obducens*) is active now in landscape plantings of garden impatiens (*Impatiens walleriana*). Symptoms begin as mild yellowing and curling of leaves (Figures 1, 2). On the underside of the leaves, the white growth (sporangia) of the pathogen can be observed (Figure 3). As the disease progresses, infected foliage drops from the plants, leaving behind bare green stems. Fungicides will not cure plants with the disease, so Infected plants should be removed, bagged and discarded. Only garden impatiens and garden balsam (*I. balsamina*) are susceptible to this downy mildew – New Guinea impatiens (*I. hawkeri*) is not affected. There is hope for garden impatiens, as breeders develop new *I. walleriana* cultivars with stronger disease resistance. The Imara XDM series from Syngenta Flowers and the Beacon series from PanAmerican Seed are two such new releases.



Figure 1. Curled leaf with slightly yellow edges, early symptoms of impatiens downy mildew.
Photo: K. Rane, UMD



Figure 2. Impatiens downy mildew symptoms.
Photo: K. Rane, UMD



Figure 3. White growth of the impatiens downy mildew pathogen on underside of infected leaf.
Photo: K. Rane, UMD

Peachtree Borer Activity

By: Stanton Gill

We had 25 adult male peachtree borers in our traps at Westminster on July 7. Activity is very high and if you have cherry, plum, peach, or cherry laurel that are susceptible, then now is the time to treat with either Onyx (bifenthrin) or permethrin applied onto trunks of susceptible plants.

Diagnosis of Herbaceous Perennial Problems

By: Stanton Gill

If you are growing herbaceous perennials in the nursery or landscape, then you will want to attend the July 25th Herbaceous Perennial Diagnostic Day at The Perennial Farm. Karen Rane, David Clement, Andrew Ristvey, Joyce Latimer (VPI), Sara Tangren (Empire Landscape Company), and I will walk you through how to deal with diagnosing diseases, insects, mites, and nutrient deficiencies on herbaceous perennials. Joyce Latimer will cover how to use plant growth regulators to make perennials more compact and have more flowers. Sara Tangren will cover native herbaceous perennials and how work these plants into the landscape. We have asked Kirk Floyd to demonstrate the use of drones in monitoring in a nursery set-up.

The sessions will all be hands-on and the number of participants limited so we can cover all of the questions. MNLGA is handling all of the registration. Go to https://www.mnlga.org/ev_calendar_day.asp?date=7%2F25%2F19&eventid=81 to register. We look forward to seeing you there. If you have questions about topics, give me a call at 410-868-9400.

Seed Pods on Magnolia

By: Stanton Gill

Magnolias are forming their seed pods in July. Jack Baronner sent in a picture of magnolia that he mistook for an insect induced plant gall. I can understand how this seed pod would be mistaken for a strange insect gall, but it is part of the plant.



Deformed magnolia seed pods can occur when there is insufficient pollination
Photo: Jack Baronner, Antietam Tree and Turf

Summer Apple and Peach Tree Pruning

By: Stanton Gill

Several nursery owners/managers are growing peach and apple trees for their customers. Also, several landscape managers are specializing in maintaining fruit trees for their customers. Penn State Biglerville Experiment Station just put out a good online article on summer pruning of fruit trees. Peach trees form their flower buds for next season in mid to late July. It is important to have sunlight hitting the one year old branches that you want to bear in 2020. By July pruning you can open up the canopy to let in the sunlight to form flower buds on flower branches. With the regular rains this season we are seeing healthy peach trees with 4 – 6 foot of new growth. This growth is great, but it shades out lower branches which reduces flower bud formation for the next year on these shaded branches.

For apples and pears, the flower buds form by mid to late August for the next year. Summer pruning can be done to increase light on the fruit in mid to late August. For apple, this increased light penetration helps color up the fruit.

Chiggers

By: Stanton Gill

With all of the rain, the grasses and weeds are growing like crazy in 2019. Last Friday, I was mowing down grass and weeds that were 24 – 28” high. In short order, I was being bitten by chiggers. I should have expected this problem since chiggers tend to be more common in damp areas with low-growing shrubs, tall grass, weeds and similar foliage. Dealing with chigger bites is no fun and you end up scratching into the wee hours of the night after an attack. If dislodged from the host, chiggers die quickly, but the irritation and itch continues until the body neutralizes the saliva and repairs the tissue damage. The fluid oozing from the wound solidifies into a hard “cap” which is distinct chigger bites and not other arthropods. Spraying to control chigger populations in infested areas has limited effectiveness and gives temporary control of only a few days or weeks, depending on environmental conditions. Still, after you been bitten many times, the tendency is to get revenge with spraying the area. Once the area is mowed, then chigger problems tend to drop down significantly. So, get someone else to mow the area, preferably, someone you don’t care for too much. Chiggers avoid direct sunlight and normally will not infest areas that are mowed or otherwise well maintained.



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Chiggers can be found in areas with tall grass
Photo: Susan Ellis, Bugwood.org

Powdery Mildew Shows up on Crape Myrtle

By: Stanton Gill

S. David Krimins of Edgewater found crape myrtle with powdery mildew. He reported that this disease is also on rhododendrons and skip laurels.



Look for powdery mildew infecting crape myrtles and other plants
Photo: S. David Krimins

Crape Myrtle Problems

By: Stanton Gill

This week, I have been visiting nurseries and landscapes with crape myrtles with branch dieback. Most of the dieback I have observed is from winter injury which occurred way back in January and February of 2019. Most of the plants I've seen, even though they had a fair amount of dead wood, appear to be generating new replacement growth in July. The winter damage was not uniform in nurseries or landscapes. I suspect that the excessive rain in 2018 damaged the root systems of some of these plants and contributed to the winter dieback problems since the weakened plants went into the winter under stress.



Many crape myrtles are dying back due to injury sustained during the winter

Photo: Stanton Gill

Orangestriped Oakworm

Elaine Menegon, Good's Tree and Lawn Care, found orangestriped oakworm caterpillars on July 9 at a property in Harrisburg, PA. She noted that they did a small amount of damage. These caterpillars feed in clusters and initially skeletonize leaves. Larger caterpillars are defoliators and only leave behind the leaf mid-rib. The caterpillars will feed en masse and completely defoliate whole branches. Control is best when caterpillars are in the early instar stages. Bt and Spinosad work very well. Acelepryn or Mainspring will also work well.



Orangestriped oakworm caterpillars are active into October

Photo: Elaine Menegon, Good's Tree and Lawn Care

Japanese Beetle and Green June Beetles

Marie Rojas, IPM Scout, found Japanese beetles and green June beetles feeding on plants as well as on fruit. Green June beetles are more of a problem on turf and fruit than ornamental plants.

We are seeing almost no Japanese beetles here at the research center in Ellicott City. Mainspring and Acelepryn can be used for adult control of Japanese beetles.

Japanese beetles and green June beetles are feeding heavily on these peaches

Photo: Marie Rojas, IPM Scout



Redheaded Pine Sawfly

Nancy Woods found redheaded pine sawfly larvae on *Cedrus deodora* on July 7. Larvae feed gregariously and strip the needles from the top terminals and branches. This native sawfly has two generations per year in this area. Trees growing on shallow soils, wet or dry sites, or under other stressful conditions are most often attacked.

Control: For isolated trees, prune out branches where sawflies are aggregated. If numerous trees are infested, treat with Conserve or a synthetic pyrethroid.

Look for activity of the first generation of redheaded pine sawfly
Photo: Nancy Woods



Fall Webworms

Marie Rojas, IPM Scout, is reporting that the second generation of fall webworms has just started to hatch out on *Malus 'Donald Wyman'*. Fall webworms feed on a wide range of woody plants. They feed within the webbing.

Control: If possible, prune out webbed terminals. Bt, horticultural oil, or insecticidal soap can be used for early instars. Other control options include spinosad (Conserve), Acelepryn, and Mainspring (from Syngenta Company). There are many predators and parasites that help keep this native pest below damaging levels.

Second generation fall webworms can cause significant damage to plants
Photo: Marie Rojas, IPM Scout



Yellownecked Caterpillars

Marie Rojas, IPM Scout, is finding early instar yellownecked caterpillars on swamp white oak this week. There is only one generation year, but caterpillar activity occurs now through October.

Control: Parasitic wasps and tachinid flies help keep caterpillar populations in check. Bt can be used for small larvae and other labelled insecticides can be used for larger caterpillars if needed.



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Early and late instar yellownecked caterpillars can be found throughout mid to late summer

Disease Reports



Rust is on serviceberries, crabapples, and hawthorns (photo)
Photo: Marie Rojas, IPM Scout



Powdery mildew on dogwood
Photo: Mark Schlossberg, ProLawn Plus, Inc.

Barklice (Psocids)

We have received multiple reports of barklice (Psocids) over the last several weeks. They are common during high moisture periods (rain and high humidity). They feed on lichens, decaying organic matter, dead insects, molds, fungi, and pollen. At times, they show up in large numbers on tree trunks. Barklice do not feed on living plant material, so control is not necessary.



Barklice (psocids) feed on decaying plant material, fungi, and dead insect; adults are shown in the photo; nymphs have stripes
Photo: Frank Dudek, Arbor Valley Tree Service



Quite a few deer were hanging out on this lawn
Photo: Mark Schlossberg, ProLawn Plus, Inc.



Fall webworm adults and dobsonflies are insects you might find on the wall of a building in the morning
Photos: Greg Kenel, Landscapes by Gregory



UGA5304032

Tomato hornworms are active now

Photo: Whitney Cranshaw, Colorado State University,
Bugwood.org

Tobacco hornworms are another caterpillar that is active at this time of year; braconid wasps and tachinid flies can help with control of hornworms. For information on hornworms on tomatoes, see Jerry Brust's article in the [July 7, 2017 IPM Report](#).

Photo: Craig Greco, Yardbirds, Inc.



With the continued periods of hot weather, monitor plants closely for mites.

Photo: Jeff Lavrusky, Brightview

MDA Container Recycling Program

See the [MDA brochure](#) for locations and dates for the 2019 MDA Container Recycling Program

University of Maryland Turfgrass Research Field Day

Date: Wednesday July 17, 2019

Check in : 12:00pm – 1:00pm

Tour of Research Plots: 1:00pm to 4:00pm

Crab and BBQ Dinner: 4:30pm

Registration - go.umd.edu/turf

Recertification Credits for Pesticide
Applicators

MD, DC, DE, PA, VA, and WV

MD Professional Fertilizer Applicator Credits

Admission is FREE for members of
MTC, MAAGCS, ESAGCS, and MASTMA

Speakers



Bill Kreuser, Ph.D.
University of
Nebraska-Lincoln



Joe Roberts, Ph.D.
University of
Maryland



Geoff Rinehart
University of
Maryland



Joe Doherty
University of
Maryland

Beneficial of the Week

By: Rebeccah Waterworth and Paula Shrewsbury

The black and gold bumble bee, *Bombus auricomus*

Paula and I may have mentioned this before, but one hazard as an entomologist is the need to stop and study anything flying around a flower. This is precisely what happened on a mid-June afternoon in the middle of Washington, D.C. As I was walking along Independence Avenue outside the Arts and Industries Building, I was immediately distracted by two large bumble bees (Order Hymenoptera, Family Apidae) buzzing around flowers (Fig. 1). I am familiar with the appearance of a few species, such as *Bombus impatiens*, the common eastern bumble bee. However, I was struck by the size of these particular bumble bees. Both individuals were easily twice the size of an individual *B. impatiens*. Two bright yellow bands of abdominal hairs or setae were also quite different than “normal.” I had not seen this species before and did what any entomologist would do. I stepped into the landscaping to have a closer look! See this [video](#) to watch one of the bees foraging.

As it turns out, I was watching two black and gold bumble bees, *Bombus auricomus*. In Maryland, this species is one of 14 that comprise the genus *Bombus* (from the Greek word that means “a buzzing sound”). There are fewer than 50 species of *Bombus* in North America. All bumble bees are considered generalist feeders or polylectic (feeding on flowers in many plant families). Depending on the length of a bee’s tongue or glossa, some bumble bee species are more successful at feeding on flowers with deep tubes such as beardtongues (*Penstemon*) or foxgloves (*Digitalis*). If you watch at the 38 to 40 second point in [this video](#), you can see the black glossa on the foraging bumble bee pushing into the thistle flower. *Bombus auricomus* is a long-tongued bee and example food plants for this species include: *Cirsium* (thistles), *Dalea*, and *Trifolium* (praire clovers and clovers, respectively), *Delphinium* (larkspurs), *Dipsacus* (teasel), *Echinacea* (coneflower), *Hypericum* (St. John’s worts), *Monarda* (bee balms), *Penstemon*, and *Vicia* (vetches) (list from Williams et al. 2014). According to Sam Droege, a native bee expert and a scientist with the U.S. Geological Survey, it is really important to have large fall-blooming composites to attract them.

Like honey bees (*Apis mellifera*), all bumble bees are eusocial or social. There are three important components for insects to be considered truly social. 1) There are castes within the colony. In the case of bumble bees, there is a queen, non-reproducing workers, and males in late summer. 2) There is a division of labor among the individuals in the colony. Queens reproduce and workers forage for food, take care of young bees, and defend their nests. 3) Generations of individuals within the colony overlap. Older workers help take care of their younger “sisters”.

There are two very important differences between honey bees and bumble bees. First, bumble bees occur in annual colonies, and new colonies are founded early every spring once the weather warms. A honey bee colony is perennial and can persist from year to year. Nesting sites of honey bees, if humans do not provide them, are often found in caves, rock cavities, and hollow trees. Bumble bee nests, including those of *B. auricomus* are mostly found in the ground, often in pre-existing cavities like abandoned rodent burrows. See [this video](#) for bumble bee workers moving in and out of their underground nest. If you were to dig up one of these nests, it would look like the one seen in figure 2. Bumble bees can also nest in hollow logs or in building foundations. Depending on the species, mature bumble bee nests range from fewer than 200 individuals to about 1,000. Honey bees could have 60,000 individuals in a single nest in comparison! We do not know the specific size of a *Bombus auricomus* nest other than it is “small.”

The development of annual nests of bumble bees is fascinating. First, a mated overwintered queen emerges in early spring from hibernation. She forages among the few available flowers and searches for a suitable nest site. Queens do not do any excavation. They simply take advantage of an existing cavity. Once a site is found, a queen builds a small honeypot to store nectar and a brood clump to lay her first clutch of eggs. She provisions the eggs, which will soon be larvae, with a small amount of pollen moistened with nectar. The queen is a busy bee in the nest’s early stages, balancing her time by caring for her first brood of daughters and foraging for food. Once individuals in this first brood are adults, they are the ones to forage for nectar and pollen and care for their sisters. These workers are not capable of having offspring. Hormones emitted by their mother, the queen, suppresses ovary development. Only the queen can lay eggs. Later in the season, the queen lays special eggs, which will be future queens and male bees (drones). Once these late season reproductive individuals mature, they mate. Males will die as well as old queens and all workers before winter, but it is the queens-to-be that hibernate and emerge on those “warmer” spring days to start this process all over again.



Figure 1. *Bombus auricomus*, the black and gold bumble bee. This individual is most likely a queen and about an inch long. She is foraging on *Agastache foeniculum*. Photo by R. Waterworth, UMD



Figure 2. A nest of *Bombus bimaculatus* removed from its cavity. This species builds nests primarily underground. Photo borrowed with permission from Scott Nacko, bugguide.net

As many of you know bumble bees are important pollinators. First, they can “buzz” pollinate, something that honey bees cannot do. Buzz pollination is essential in many food crops, including solanaceous plants and some berries, such as blueberries. This [part](#) of a video explains how bumble bees buzz pollinate and displays this event in slow motion. Essentially, violent shaking of a bumble bee’s flight muscles while holding the flower dislodges the pollen onto the bee. Also, research has shown that bumble bee workers visit twice as many flowers per minute compared to honey bees. If you watch the video above of *B. auricomus*, you can see how quickly she moves from flower to flower. This rapid rate of floral visits means that pollination efficiency is greater. Lastly, researchers estimate that bumble bees do eight times more work than honey bees because bumble bees remain active in colder temperatures. One species in urban Britain remains active at 37 °F! They are also larger than honey bees and can carry more pollen.

At very first glance, I thought that I was watching a large carpenter bee, *Xylocopa virginica*, (Hymenoptera, Family Anthophoridae). However, I realized just in time that the dorsal or top of a bumble bee’s abdomen is fuzzy, while on a carpenter bee, the same area is smooth and shiny. I will never let the size of a bee confuse me again. I am always glad when a new insect can distract me!

We would like to thank Sam Droege for his willingness to confirm the identification of bees from our photos and video. We also thank Mike Raupp and Chris Sargent for their technical expertise in preparing the video of *B. auricomus* for the [Bug of the Week](#) YouTube channel.

For anyone who is interested, there is an online publication called Bees of Maryland: A Field Guide written by the North American Native Bee Collaborative. Information for this article also came from an identification guide entitled *Bumble Bees of North America* (Williams et al. 2014) and *The Bees in your Backyard* (Wilson et al. 2016).

Weed of the Week

By: Chuck Schuster, UME

The photos with the June 28th weed article were pineapple weed and not common groundsel. New photos are now posted with the [report](#) online.

Hotter temperatures are slowing turf growth in many areas. Soil moisture is low to moderate in some areas, and nearly saturated in others. Summer weeds in turf are showing up in many settings. It is a challenging period of the summer for weed control. Turf diseases are also finding ideal conditions in many areas.

Several samples have been shared this week that were the same weed. Small carpetgrass, *Arthraxon hispidus*, also known as joint-head grass, is a sprawling annual grass that can be found in turf and landscape settings in the eastern United States. Introduced from Japan and eastern Asia, some early reports show its earliest introduction was in the early 1970’s. This monocot can grow up to eighteen inches in height. It produces an oval or lance-shaped pointed leaf that has hairs where the leaf base encircles the sheath and on the leaf margins. Leaves will be near two and one half inch in length, and three quarters of an inch in width, producing a thin membranous ligule that is up to one eighth



Photos: Chuck Schuster

inch long. This plant produces an up to three inch spike of flowers that will resemble fingers. The root system is fibrous, and the plant roots at nodes. This plant prefers wetter locations, and soils in this area are meeting this need.

Cultural control should include moisture management. Irrigate only when necessary and review downspout splash block areas. Chemical control of this weed in turf can be accomplished using products labeled for crabgrass pre-emergent control (pendimethalin, dithopyr, prodiamine, oxadiazon). Mowing to prevent seed head production will reduce plant density in following years. Post emergent non selective herbicides work effectively in landscaped areas.

Plant of the Week

By: Ginny Rosenkranz, UME

Prunus laurocerasus 'schipkaensis' or Schip laurel is a beautiful broadleaf evergreen that can be considered a large shrub or a small tree, growing from 10-18 feet tall and 25-30 feet wide in a dense rounded upright shape. The plants are covered with very glossy oblong dark green leaves with minute serrated leaf margins that expand to 6 inches long that are arranged on the stems in an alternate fashion. The tiny creamy white fragrant flowers bloom from April to May and are arranged on an upright cluster called a racemes that can be up to 5 inches long. The flowers mature into small black berries called a drupe by mid-summer. The flowers and fruits attract pollinators, beneficial insects, and birds. Plants grow best in moist, organic, well drained soils in full sun to part shade. Cold tolerant in USDA zones 6-8, the Schip Laurel can be used as a specimen, as a hedge or screen or as a dappled shade woodland planting. Plants are tolerant of urban air pollution and some road salt. The Schip Laurel is very tolerant to pruning and can be grown as an informal hedge or a very formal tightly pruned hedge. This plant was one of the many beautiful ones that were seen at the MNLGA Field Day.



The flowers and fruits of *Prunus laurocerasus 'schipkaensis'* attract pollinators, beneficial insects, and birds

Photos: 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 1587 DD (Cumberland) to 2214 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:

- Pine needle scale (2nd generation) crawlers
- Green June beetle adult emergence
- Obscure scale crawlers
- White prunicola scale (2nd generation) crawlers
- Orangestriped oakworm egg hatch/early instar
- Maskell scale (2nd generation) crawlers
- Euonymus scale (2nd generation) crawlers
- Japanese maple scale (2nd generation) crawlers

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

Degree Days (as of July 10)

Abingdon (C1620)	1794
Annapolis Naval Academy (KNAK)	2212
Baltimore, MD (KBWI)	1981
College Park (KCGS)	1825
Dulles Airport (KIAD)	1877
Frederick (KFDK)	1893
Ft. Belvoir, VA (KDA)	1981
Gaithersburg (KGAI)	1797
Greater Cumberland Reg (KCBE)	1587
Martinsburg, WV (KMRB)	1714
Natl Arboretum.Reagan Natl (KDCA)	1214
Salisbury/Ocean City (KSBY)	1629
St. Mary's City (Patuxent NRB KNHK)	2115
Westminster (KDMW)	2028

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

CONFERENCES

All Day Session on Herbaceous Perennials

July 25, 2019

Location: The Perennial Farm in Glen Arm, MD

Registration info will be posted at the [MNLGA calendar](#) site when available

Green Industry Professional Field Day and Trade Show

July 18, 2019, 7:30 a.m. – 2:30 p.m.

Location: American University | 4400 Massachusetts Avenue, NW, Washington, DC 20016

Presented by [PGMS DC Branch](#), NVNLA, VA Cooperative Extension, and in cooperation with the MAC-ISA

LCA Plant Diagnostic Program

August 14, 2019

Location: Ag Farm Park, Derwood, MD

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
Extension Educator
cfs@umd.edu



David Clement
Plant Pathologist
clement@umd.edu



Andrew Ristvey
Extension Specialist
aristvey@umd.edu



Ginny Rosenkranz
Extension Educator
rosnkranz@umd.edu



Nancy Harding
Faculty Research
Assistant

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

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