UNIVERSITY OF MARYLAND EXTENSION

TPM/IPM Weekly Report

for Arborists, Landscape Managers & Nursery Managers

Commercial Horticulture **July 8, 2022**

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 sgill@umd.edu

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

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

Ambrosia Beetle Update

By: Stanton Gill

Ambrosia beetle activity has dropped off tremendously over the last 2 weeks. We may get lucky and not see damage in July. If you do find trees with frass tubes expelling from the trunk, please let me know at sgill@umd.edu the location and tree species.

Biological Control Conference June 30

By: Stanton Gill

We had excellent speakers at the June 30th biological control conference and we appreciate the involvement of the 80 people who attended. I asked each of the speakers if we could convert their talks into PDF so participants can download their talks. Some of the speakers agreed to have their lecture posted to our IPMnet Conference page.

Drone Training

July 28, August 4, and August 11, 2022

Registration information and links are available on the IPMnet conference page

Tree Protection (?)

By: Karen Rane, UMD

Can you see the wire fence around the trunk of the oak tree in this photo? The white sign on the fence says "Tree Protection Area – No Disturbance Permitted Beyond This Point". The fence is placed in a circle about 3 feet from the trunk. This is fine for protecting the trunk from damage, but unfortunately there is a large part of this tree – most of the root system! – that is located outside of the "protection area". The disturbed, bare ground between the tree and the sidewalk is evidence of the construction activity that occurred within the root zone of this tree, and the thinning crown is a symptom of the resulting root injury. Once the equipment is removed, the area graded, and turfgrass established, the physical evidence of the construction activity will be gone, but the tree may continue to show branch dieback for years to come. It's important to protect more than just the trunks of trees in construction zones.

Fence circling the trunk of a tree in a construction area.
Photo: K. Rane

Disturbed root zone area outside of the "protection" fence.
Photo: K. Rane

Japanese Beetles

Marie Rojas, IPM Scout, is reporting a lot of of Japanese beetle activity in Frederick County this week.

Japanese beetles are active throughout the area
Photo: Marie Rojas, IPM Scout

Barklice

Jim McWilliams, Maxalea, Inc., found barklice (Psocids) in Baltimore County on a saucer magnolia on June 29. 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 are often seen in large numbers during high rain and high humidity periods
Photos: Jim McWilliams, Maxalea, Inc.

Powdery Mildew

Marie Rojas, IPM Scout, is reporting that powdery mildew is pretty bad this year, especially on *Cornus florida*. Marie notes that she also saw it really bad on *Catalpa* at another nursery last week.

Powdery mildew requires a film of water, like we have during high humidity periods, for infection
Photo: Marie Rojas, IPM Scout

Just Really Cool Insects in July

By: Stanton Gill

Hercules Beetle

Two really cool insects came into our CMREC labs this week. One was from Ron Miller, Super Lawns, who was visiting a donut shop when he saw a giant beetle on a door. He placed this beetle on a napkin and shot a picture. This is the Eastern hercules beetle, *Dynastes tityus*. We generally see the adult hercules beetle in August, but this was one of the early ones out flying about in 2022. Hercules beetles are large and look somewhat wicked, but they are basically harmless beetles and are fun to observe and show to kids. Only males exhibit the characteristic horns (one on the head, and a much larger one on the prothorax). Female hercules beetles are slightly smaller and do not have the horns projecting. The females lay eggs into rotting tree stumps, and the larvae go through 4 instars and become one very large beetle grub that looks somewhat like a giant June beetle grub.

Adult male hercules beetle
Photo: Ron Miller, Super Lawns

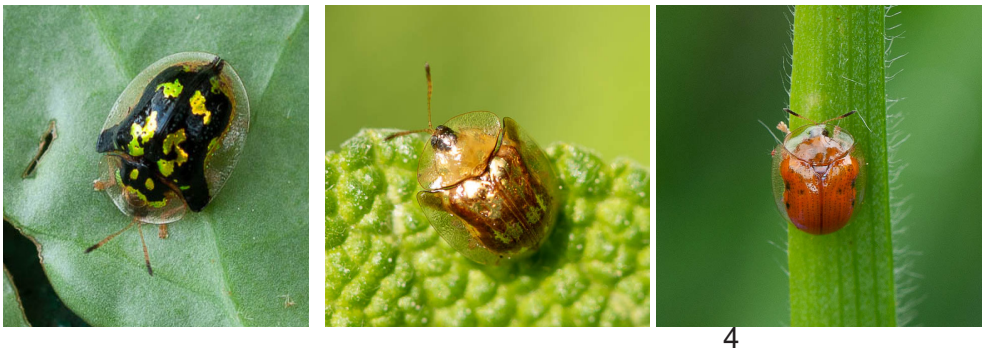
Golden Tortoise Beetle

The other interesting insect that is being observed this week is the gold bug, also known as golden tortoise beetle, *Charidotella bicolor.*

These "goldbugs" attract the attention of landscapers when they feed on plants in the family Convolvulaceae, which includes sweet potato vine, morning glory, and bindweed. Since many landscapes have ornamental sweet potato being planted, it is making plentiful food for the larvae and adult to feed on. Suzanne Klick observed these young goldbug larvae on field bindweed at our CMREC lab recently. They are still small and in the 1st instar stage. As we move through July, they will mature, and the adults will be seen in August.

Golden tortoise beetle (aka goldbugs) larvae on field bindweed

Few insects boast a truly gold-colored body. The golden tortoise beetle is even more remarkable because it can actually change its coloring at will thanks to microscopic cavities in its cuticle that house pigmentation. The beetle's metallic sheen can be dulled, and that brilliant, shiny gold can become brown. Upon death, the metallic glimmer fades. Like a tortoise, the body of the beetle is humped, or rounded, as if the wing coverings were actually a shell. The bottom edges of the beetle's elytra are transparent, like glass. This insect really does very little damage to ornamental sweet potato vines so just observe them and show them to young budding entomologists as another cool insect of summer.



The color of adult golden tortoise beetles varies due to moisture levels

Spider Mites

Steve Sullivan, LandCare, reports high spider mite activity on winged euonymus this week. We tend to see spider mites increase when it's hot after periods of rain. Registered miticides such as Avid can be used for control. When using horticultural oil, be sure to get good coverage of the undersides of the foliage.

Heavy stippling on winged euonymus foliage from spider mite feeding

Mayflies in June

By: Stanton Gill

Mark Schlossberg and Bill Stocker sent in these pictures of a massive mayfly emergence at Put-In-Lake on Lake Erie in the end of June. Mark noted: “Interesting what we learned about the mayflies - they have increased in population here because Lake Erie is much cleaner now and more sunlight gets down to the bottom of the lake where the eggs drop down to.”

If you not seen a mayfly emergence put it on your list to visit, assuming you enjoy insects. The mass emergence is spectacular. Million upon millions of mayflies flying above the water, mating over a very short time then dying en masse.

Mayflies covering a tent near Lake Erie in late June
Photo: Mark Schlossberg, ProLawn Plus, Inc.

Mayflies covering a building
Photo: Bill Stocker

Spotted Lanternfly Update

By: Stanton Gill

We took the second set of data on our spotted lanternfly trial this week. Most of the nymphs were in the 3rd and 4th instar stage in Harford County where we are conducting the trials. Nymphs are not producing huge amounts of honeydew at this point, but you can find some honeydew spots on some of the foliage of plants on which they are feeding. The nymphs are very hyperactive and some of the ones that have moved in 4th instar are leaping when disturbed.

If you visit a site with spotted lanternfly, make sure the nymphs are not on your clothing or on your car. We found them on our shirts and on the cars when we finished the trial this week and carefully removed all of the ones we could find.

At the Biological Control Conference in December of 2021, we had Dr. Julie Urban from Penn State University present on her work with spotted lanternfly and the honeydew they produce, which is copious when you move into August and September. Her work was investigating the impact on honey bee and honey production. She found that the honey bees are harvesting the honeydew produced by the spotted lanternflies. The honey that the honey bees produce from this SLF honeydew has a very distinct 'smokey flavor'. Her team is investigating what is giving the honey this unusual taste. They suspect it is from sooty mold species growing on the honeydew that the SLF excrete and the honeybees are carrying this into their honey. Not great news for honey bee hobbyists, unless, you have good use for smokey flavored honey.

At our trial site in Harford County, we found third and fourth instar nymphs that were very mobile moving about and feeding heavily on ailanthus on Thursday, July 7. Brian Kunkel, University of Delaware, is doing a count on this heavily infested tree of heaven. There were incredible numbers of nymphs feeding on 3 ft tall *Ailanthus*, some with over 500 nymphs per tree.

Bagworms

Marie Rojas, IPM Scout, is finding a lot of bagworms this week in a Frederick County nursery on various evergreens. Elaine Menegon Good's Tree and Lawn Care, is finding them in York, PA on July 8. **Control:** Options include spinosad (Conserve), Acelepryn, and Mainspring. Cooler areas of the region might have bagworms that are still small enough for Bt to work. In light infestations, hand picking off bags is an option.

A high population of bagworms can cause significant damage to trees
Photo: Marie Rojas, IPM Scout

China Mark Moth

By: Stanton Gill

Kelly Billing sent in an interesting aquatic pest of water lily. We worked on the life cycle and control options for this pest back in 1997-2000. This an aquatic Lepidopterous species that feeds on waterlilies. It is kind of like the bagworm we see on terrestrial plants but specific to water lily plants. It is commonly called the Brown China mark moth, *Elophila nymphaeata*. It is a species of moth of the family Crambidae. It was described by Carl Linnaeus in his 1758 10th edition of *Systema Naturae*.

The larvae feed on Potamegaton aquatic plants, Nymphaeaceae, commonly called water lily, and *Nuphar lutea***,** commonly called the yellow water lily.

We have a factsheet we developed in 2007 that lists the life cycle and control options for these aquatic pests.

China mark moth larvae cut out a piece of leaf to put over them and they feed within this 'sandwich'
Photo: Kelly Billing

After-effects of the Cicadas of 2021

By: Stanton Gill

The periodical cicada emergence in 2021 provided huge food supplies for birds in 2021. When any animal receives a food boost, they build their population up in response to plentiful food sources. It appears this is what happened with the many bird species of Maryland that feasted on periodical cicadas in 2021. We are seeing a large increase of bird activity in Maryland landscapes and especially in Maryland orchards. We are seeing large numbers of mockingbirds, towhees, cardinals, crows, ravens, and an assortment of songbirds in large numbers in Maryland and southern Pennsylvania orchards. The birds are numerous and feeding heavily on fruit plantings. In orchards, they are heavily damaging cherry crops, blueberries, gooseberries, and currants in 2022. The pressure is so strong, many are ignoring the traditional sound deterrent devices. They are also learning how to get under netting that has worked in the past. One orchard purchased new powerful laser lights to try to deter birds off blueberry and cherry crops.

Beneficial of the Week

By: Paula Shrewsbury

Oh my… what long legs you have!

This week while I was observing insects on flowering plants, I came across a **berytid bug, a.k.a. stilt bugs** because of their relatively long thin legs and antennae, on zinnia foliage. It is not often that I see this bug so I wanted to highlight it this week. Stilt bugs are true bugs (Hemiptera: Heteroptera) in the family Berytidae. There are about 170 species worldwide. The Maryland Biodiversity website lists 4 species of stilt bugs found in MD (*Berytinus minor*, *Jalysus spinosus*, *J. wickhami*, and *Neoneides muticus*). In addition to long, thin legs and antennae, the body is elongate and slender, and the antennae are elbowed (have a bend in them) and have a small "knob" on the tip that can be used to distinguish stilt bugs from other slender bodied, long-legged insects (see images). They are brown or green in color and adults are 5-9 mm (0.2-0.4") in length. Adults and nymphs are similar in appearance, except nymphs will not have fully develop wings (see image). All stilt bugs are omnivores in that they feed on plant tissue, drinking plant sap as a source of moisture.

A number of species of stilt bugs are considered pests of crops such as cacao, tobacco, and tomato. Some species are generalists, such as *Jalysus wickhami* which is found on over 4 dozen species of plants. While *J. spinosus* is a specialist and is mainly found on grasses. Many species prefer to feed on glandular (hairy) plants.

Stilt bug adult (Berytidae) on the leaf of a zinnia plant.
Photo: P.M. Shrewsbury, UMD

A close up of a stilt bug (Berytidae) adult showing its long antennae with a knob at the end and its extremely long legs that help it to walk across leaves with hairy surfaces and not get caught.
Photo: M.J. Raupp, UMD

The long, slender legs of stilt bugs help them to move about on trichome (hairs) covered plants that often trap most insects. In some cases, stilt bug feeding results in flowers turning black and dying which prevents fruit set, whereas in other cases no plant damage is caused.

There are also a number of species that are important predators known to feed on aphids, hornworm eggs and larvae, leafhoppers, thrips, insect eggs, and other pests that are small is size (Henry and Froeschner, 1998). For example, the spined stilt bug, *J. wickhami*, is the most abundant predator in tobacco providing biological control of a number of pests (NCSU Ext). *Jalysus wickhami* has been reared and released in tobacco as a biological control agent in NC. It is also found in tomato. Studies have shown that planting alyssum (flowering annual) alongside fields of tomatoes increased predatory stilt bug populations.

For an interesting video of stilt bugs (by M.J. Raupp, UMD) click here.

Stilt bug nymphs (Berytidae) on the bud of a plant with glandular trichomes (hairs). Their long legs help them to avoid getting stuck on the plant.
Photo: M.J. Raupp, UMD

Weed of the Week

By: Chuck Schuster

Hemp dogbane, *Apocynum cannabinum*, is a perennial herbaceous plant weed that is found in many areas of the United States. This plant can be found in many different locations, including landscapes, nurseries, forest fringe areas, and in turf on occasion. It is showing up this year very often in storm water management areas, bio retention areas, and near fringe areas. This plant is poisonous if ingested by livestock and pets.

Hemp dogbane will grow to a height of six feet, starting from a taproot with an extensive, branched, horizontal root system that produces vegetative buds along the lateral roots allowing it to grow in clumps or colonies. Roots from a two-year-old plant will be found to grow fourteen feet in depth and twenty feet in diameter. The leaves are opposite on the upright stem, being up to five inches in length, and one to one- and one-half inch in width. The leaves have a short petiole attachment to the stem, and will have only a few if any hairs on the underside of the leaves. The stems will develop a reddish color as they mature and will have multiple branches nearer to the top of the plant. The entire plant will secrete a milky sap when cut or broken, the sap being able to cause skin blisters. Flowers occur on terminal clusters, are bell-shaped,

small, white or very light green in color with five petals, producing a small pair of long narrow seed pods called follicles that will turn reddish brown when fully mature. These pods can be four to eight inches in length. Very similar to spreading dogbane, the flowers of this plant are pinkish-white and form in clusters found on the main stems, at the ends of the principle branches, and at stem nodes where leaves attach to stems. Spreading dogbane is also a perennial and has similar rooting abilities. Another similar plant is common milkweed, (*Asclepias syriaca*) which shares the creeping roots system, the milky sap and the opposite leaves. One will also find that common milkweed will produce young leaves will have fine hairs while hemp dogbane will be nearly hairless.

Hemp dogbane
Photos: Chuck Schuster, UME-Retired

Control can be obtained in many settings through mowing and simple disturbance if caught in the early stages. Seed production should be monitored to prevent further occurrences. 2, 4D is very effective on turf providing excellent control. In landscapes and nursery settings, 2, 4D is not an option and targeted applications of glyphosate will be necessary for eradication. Organic control can be obtained using Burnout with a minimum of two applications several weeks apart. Pre-emergent products do not produce good results in landscape and nurseries with hemp dogbane.

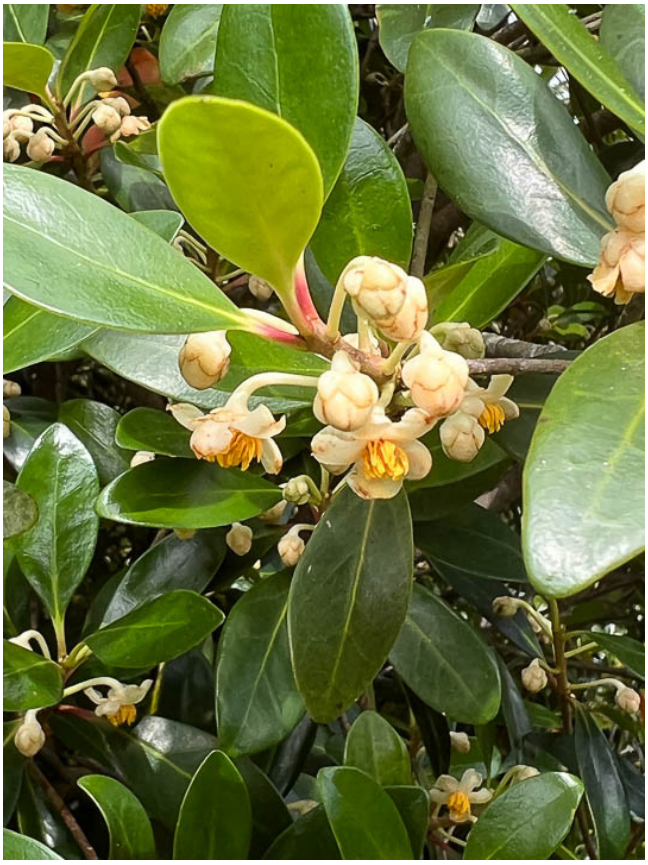
Plant of the Week

By: Ginny Rosenkranz

Cleyera japonica or Japanese cleyera or sakaki is an evergreen shrub that can be used as a substitute for red-tip photinia. It grows into a tall evergreen shrub or small tree that can grow 10-15 feet tall and 8-10 feet wide, thriving in full sun or part shade and organically rich, moist, well-drained soils. Once established, the plants are very drought tolerant, but they should have some shelter from strong winter winds. New leaves are bronze-red that mature to glossy dark green which are almost leathery. Leaves are whorled at the tips of the branches with a smooth entire margin. The underside of the leaves are a softer lighter green. Best of all, the leaves are resistant to Entomsporium leaf spot disease. The plants are both heat and humidity tolerant and cold tolerant from USDA zones 6-9. The further south the planting the more afternoon shade is appreciated. In June, fragrant creamy white bell shaped flowers bloom along the stems. They can be in small clusters of 2-5 or single, and they mature to shiny small black fruit. There are a number of varieties including ‘Bronze Beauty’ that exhibits very bronze new foliage, ‘LeAnn’ that has red-maroon fall foliage, and ‘Montague’ with maroon and bronze fall foliage. There are also 2 new varieties that are green and white variegated. Romeo® Cleyera foliage has golden yellow margins around dark green centers while Juliet® Cleyera foliage has pure white margins around dark

***Cleyera japonica* foliage**
Photo: Ginny Rosenkranz, UME

green centers. For even more colors, *Cleyera* 'Carolina Sunset' new foliage is a soft yellow and copper color that mature to dark green. The lighter colored leaves of the variegated varieties need more afternoon shade than the dark green varieties. Plants can be used as a foundation plant, a hedge or screen or as a specimen. There are no serious insect or disease pests.



***Cleyera japonica* in flower**
Photo: Ginny Rosenkranz, UME

Degree Days (as of July 7)

Aberdeen (KAPG)	1438
Annapolis Naval Academy (KNAK)	1645
Baltimore, MD (KBWI)	1716
College Park (KCGS)	1570
Dulles Airport (KIAD)	1634
Ft. Belvoir, VA (KDA)	1646
Frederick (KFDK)	1493
Gaithersburg (KGAI)	1520
Gambrils (F2488, near Bowie)	1618
Greater Cumberland Reg (KCBE)	1482
Martinsburg, WV (KMRB)	1415
Natl Arboretum/Reagan Natl (KDCA)	1913
Salisbury/Ocean City (KSBY)	1730
St. Mary's City (Patuxent NRB KNHK)	1943
Westminster (KDMW)	1798

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

Pest Predictive Calendar "Predictions"

By: Nancy Harding and Paula Shrewsbury, UMD

In the Maryland area, the accumulated growing degree days (**DD**) this week range from about **1415 DD** (Martinsburg, WV) to **1943 DD** (St. Mary's City). 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.

- Green June beetle – adult emergence **(1539 DD)**
- Pine needle scale – egg hatch / crawlers (2nd gen) **(1561 DD)**
- White prunicola scale – egg hatch / crawlers (2nd gen) **(1637 DD)**
- Obscure scale – egg hatch / crawlers **(1774 DD)**
- Spotted Lantern Fly – egg laying **(1825 DD)**
- Orangestriped oakworm – egg hatch / early instar **(1917 DD)**
- Magnolia scale – crawler **(1938 DD)**
- Fall webworm - egg hatch/early instar (2nd gen) **(1962 DD)**
- Maskell scale – egg hatch/crawler (2nd gen) **(2035 DD)**

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

Conferences

July 28, August 4, and August 11, 2022
Drone Training Program
Registration information and links are available on the IPMnet conference page

July 14 Scouts Diagnostic Session was cancelled since it was so close to the MAA/UME Walk on July 21.

July 21, 2022
MAA and UMD Extension Pest and IPM Diagnostic Walk
Location: Woodmont Country Club
To register for the pest walk

UMD ADVANCED LANDSCAPE IPM LAB-FIELD COURSE (in-person)
Dates: July 28 and 29, 2022 (8:00 a.m. – 4:00 p.m.)
Location: Plant Science Bld, University of Maryland, College Park, MD
Description: This 2-day course will consist of both field walks around campus and lab activities. Sessions will focus on diagnostics of plant disease and insect problems, and pest and natural enemy identification using live and other specimens, and interactive activities. Labs will be run by instructors (*Drs. Paula Shrewsbury, Mike Raupp, Karen Rane*). **For registration and course details: Email Amy Yaich at umdentomology@umd.edu**

Fall Horticulture Classes at CCBC

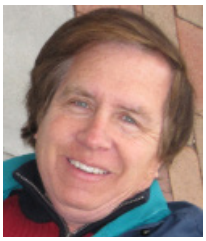
You can find out about fall horticulture classes at CCBC by going to their website.

Fall Environmental Horticulture and Sustainable Agribusiness Classes at Montgomery College

You can find out about fall horticulture classes at Montgomery College by going to their program website.
Courses include:
HORT 215 Integrated Pest Management and Entomology: Hone your pest management skills with Stanton Gill. Explore the identification of key pests, their life cycles and control methods, with emphasis on integrated pest management strategies.
HORT 222 Sustainable Turfgrass Management: Discover the proper way to manage turfgrass by using the newest and most adaptable turfgrass varieties for minimum insect and disease problems. Organic lawn care and alternative groundcovers will be discussed.
**HORT 215 and HORT 222 and other select courses in the Program, have been approved by the MD Department of Agriculture to prepare Greens Industry professionals for pesticide application certification in Category III.

Commercial Ornamental IPM Information
extension.umd.edu/ipm

CONTRIBUTORS:



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

Paula Shrewsbury
Extension Specialist
pshrewsb@umd.edu

Karen Rane
Plant Pathologist
rane@umd.edu

Chuck Schuster
Retired, Extension Educator
cfs@umd.edu

David Clement
Plant Pathologist
clement@umd.edu

Andrew Ristvey
Extension Specialist
aristvey@umd.edu

Ginny Rosenkranz
Extension Educator
rosnkrnz@umd.edu

Nancy Harding
Faculty Research
Assistant

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