TPM/IPM Special Report EXTENSION for Arborists, Landscape Managers & Nursery Managers

Commercial Horticulture

March 29, 2024

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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 sqill@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), David Clement (Extension Specialist) and Fereshteh Shahoveisi (Turf Pathologist)

Weed of the Week: Chuck Schuster (Retired Extension Educator), Kelly Nichols, Nathan Glenn, and Mark Townsend (UME Extension Educators)

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)

What is Up With Boxwood Leafminer?

By: Stanton Gill

Boxwood leafminer has risen to the top tier of leaf problems with boxwood plants. It is one of the most frequent requests we get from landscapers for optimal control. We have published several viewpoints of practitioners in nurseries and landscapes over the last 2 year in our IPM alert.

Last year, we were asked by Nancy Rechcigl of Syngenta to investigate fall compared to spring soil drench applications of Mainspring and Acelepyrn. Working with the City of Rockville arborists, Mead Tree and Turf, and Syngenta Company, we made fall applications in October of 2023 and treated a second set of mature boxwoods in March of 2024. We will evaluate the treatments in fall of 2024 and will share the results with our readers.

Weather Station Link for UMD Research Farms

In last week's report, there was an issue with the link for AGNR weather stations. It has been corrected in the online version of last week's report. These weather stations links are available on the AGNR site.

Spotted Lanternfly Update

By: Paula Shrewsbury, UMD

There is not much new to report on spotted lanternfly (SLF) this week. Last week Stanton Gill discussed that SLF are in the egg stage at this time and that the eggs hatch ~ 270 DD (late April / early May). At this time, you should be monitoring for eggs and egg hatch. Although scraping egg masses from trees was thought to be a good tactic to reduce SLF populations (and may be satisfying), research has found that ~98% of SLF egg masses are beyond reach in a tree so most egg masses will be missed with this practice. Studies have found that treating egg masses with horticultural oil (3%) will reduce SLF populations. This is the recommended strategy at this time.

LOCATIONS NEEDED for RESEARCH on SLF EGG MASSES. We are conducting studies to evaluate bioinsecticides targeting the egg masses. I am looking for locations with an abundance of SLF egg masses on trees, where the trees are accessible and the egg masses are accessible (not too high), and we must be able to treat the trees in these locations.

Please email me (<u>pshrewsbury@umd.edu</u>) if you have potential locations that could be used for the research, and / or when you start to see SLF eggs hatching.



Spotted lanternfly egg masses on a red maple in a residential landscape in Washington County MD. Photo: Josh Warner, Antietam Tree and Turf

Cold Injury

Marty Adams, Bartlett Tree Expertts, found *Pieris* shrubs with new growth that was blasted by the cold temperatures in Columbia. As we move through spring, make note of when we have had warm periods followed by blasts of cold. It will help when diagnosing problems to know that damage could be cultural and not disease or insect related.



New growth on *Pieris* shrubs that has been damaged by cold weather this spring.

Photo: Marty Adams, Bartlett Tree Experts

Bugs Rule and They Travel Well

By: Stanton Gill

If you have visited an airport lately, you will see it is jammed with travelers. I flew out of Dulles Airport last week, and it was the worst I have seen in years with mobs of people traveling every which way. Guess what – bugs love to travel also. Rollins is one of the largest pest control companies in the World. They have a subsidiary called Orkin.

With the massive amount of people jumping on planes, post Covid epidemic, and flying to various parts of the world a surge in bed bug infestations is being reported.

Recently, Orkin of Canada published a report of the most bed bug infested cities, with Paris, France topping their list. Hey, isn't the Olympics being held there this year? Meanwhile, they rated Canadian cities. Orkin Canada has released its annual list of the top 25 "bed buggiest" cities in Canada, with Toronto claiming the top spot for the seventh year in a row. Vancouver dropped from second to sixth place on this year's ranking, while Sudbury rose to second place and Oshawa to third. Winnipeg also cracked the top ten this year after placing eleventh in 2022, now ranking seventh across the country.

The top 10 bed bug ridden cities (according to Orkin, Canada) in Canada are: 1. Toronto 2. Sudbury 3. Oshawa 4. Hamilton 5. Ottawa 6. Vancouver 7. Winnipeg 8. St. John's 9. Sault Ste. Marie 10. Scarborough

Wherever you have been traveling to lately it would not be a bad idea when you return to place clothes and washable travel bags in the drier and run it for 30 - 40 minutes. Most dryers reach at least 140 °F which would kill most insects that are trying to tag along.

Periodical Cicada Update

By: Stanton Gill

Gaye Williams pointed out the following additions and corrections to the cicada emergence in southern Maryland.

https://www.cicadas.info/?page_id=96

The web article, listed above points out: St. Mary's, Calvert and Charles counties had Brood II emerge in 1996. Some areas of northern St. Mary's County, northern Calvert County, and most of Charles County did not see the emergence of Brood II. Based on all the historical, literature and museum specimens for the past 100 years, Brood X should not occur below a line from Fort Washington to Upper Marlboro to Harwood in Southern Maryland. On the Eastern Shore, Cecil and northern Kent counties will experience Brood X. All areas of the Eastern Shore below Kent County, expect for one area in Talbot County (There are records of an isolated pocket of Brood X in Talbot County, Maryland), will not experience the emergence of Brood X this year. As far as the historical records show, the areas in white do not have any periodical cicada broods.

What About Your Customers' Fruit Planting?

By: Stanton Gill

Insect Control in Fruit Trees: One of the first insects we will see active very soon is the plum curculio. We placed out baited pheromone traps on March 22. So far, no activity found in the Westminster area of Maryland. We will keep you post when we find the first activity. We will place out traps very soon in Brookeville, MD and at our CMREC labs in Ellicott City, MD.

Disease Information: Fruit trees such as plums, apricots, and peaches are all in full bloom in central Maryland this week. This is at the critical time for disease management action.Dr. Kari Peter, Penn State fruit pathologist at the Biglerville, PA Experiment Station posted a disease update reporting that "apple scab infection is predicted March 27–28". See the article on the management details.

Scale Insects: Pine Tortoise Scale and Tea Scale

Monitor plants for scale insects at this time of year. We have started to receive reports of overwintering females on plants. David Freeman, Oaktree Property Care, found pine tortoise scale on tabletop pine this month. This soft scale was already feeding and producing honeydew. It prefers feeding on newer growth. Look for crawlers in June. Predators and parasites commonly attack this scale.

Miri Talabac, UME-HGIC, received a report of tea scale on camellia through the Ask Extension site. Camellias are becoming a more common plant in landscapes. Many camellias come out of the south where tea scale is common. Look on the undersides of foliage for this armored scale. We have seen at least 2 generations of tea scale - the first one starting around the beginning of May and the second one in mid July to early August in Maryland.

Distance or Talus can be used when crawlers are active. Systemics such as Altus and dinotefuran are also options.



Tortoise scale on tabletop pine.
Photo: David Freeman, Oaktree Property Care



Tea scale with small yellow crawlers on a camellia leaf. The photo is from early May 2022. Photo: Suzanne Klick, UME

Hemlock Woolly Adelgid

Elaine Menegon, Good's Tree and Lawn Care, found hemlock woolly adeglid in Hershey, PA on March 28. Elaine noted that they are receiving calls all most every day about HWA. Paul Wolfe, Integrated Plant Care, is reporting a lot of acitvity in Bethesda and Chevy Chase of females swelling with wax in which they are laying their eggs. Paul noted that it is the heaviest he has seen in 35 years. Horticultural oil is most effective against the just hatched, reddish-brown crawlers or newly settled black crawlers. Systemic insecticides applied as soil

drenches are also effective in controling this sucking insect. There are two generations each year.

The US National Arboretum has released two interspecific hybrids with HWA resistance. They are Tsuga chinensis x T. caroliniana 'Traveler' and T. caroliniana x T. chinensis 'Crossroad'. You can find more information on these hybrids in the ASHS journal article, Tsuga 'Traveler' and 'Crossroad' – The first Adelgid-resistant Interspecific Hemlock Hybrids by Susan Bentz et.al.



Monitor hemlock woolly adelgid populations for when crawlers are active.

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

Beneficial of the Week

By: Paula Shrewsbury

So many bees flying over the lawn!

Last weekend I was out for a walk around Savage Mill (MD) and came across an area of lawn that had hundreds of bees flying over it (up to a foot or so above) and the lawn had hundreds of soil mounds (~1.5" - 3" mounds) scattered throughout the area. The bees were solitary bees in the family Colletidae, sometimes referred to as colletid bees or plasterer bees. Plasterer bees are one of many families of solitary bees. Notably, seventy percent of native solitary bee species in the United States are ground nesting bees. In our region, there are two species of plasterer bees commonly observed. One is Colletes inaequalis, which tends to be active earlier (March / April) than the second species, C. thoracicus, which is active in May.

What is their benefit? Plasterer bees are excellent early season pollinators of a diversity of plants. These early season pollinators feed on pollen and nectar from about 38 different



Plasterer bee emerging from the ground nest she has dug and provisioned with pollen for her brood. (photo by M.J. Raupp, UMD)

early blooming trees, shrubs, and herbs such as *Acer* (maple), *Vaccinium* (blueberry), *Liriodendron* (tulip tree), *Prunus* (cherries), *Ribes* (gooseberries, currants), *Malus* (apple), and *Amelanchier* (service berry, shadbush). Tulip tree is a favored host of *C. thoracicus*.

What is their life cycle? With solitary bees, each individual female maintains her own separate nest where she raises her own brood, but many nests usually occur in the same location or habitat. Plasterer bees construct subterranean nests by excavating burrows in the soil. The opening of each burrow is surrounded by a mound of soil (tumuli). These bees are referred to as plasterer bees because they line their burrows with a polymer-like secretion (like they

are plastering the walls of their burrows). Most soil nesting colletids make a main burrow that have up to several lateral cells or galleries underground. Studies have found the main burrow of *C. thoracicus* went down into the soil 7-33 cm (2.8 – 13 inches) deep. Each cell is provisioned with food by the female adult bee that is a mixture of pollen and nectar for her offspring. Once a cell has food, the female oviposits (lays an egg) in the cell, and then seals the cell with soil. When the larvae hatch from the egg they have a nice meal to feast upon.

Adult plasterer bees are hairy. They have dark bodies and the males, about 1/2" in length, have tufts of blonde hairs on their "face" and thorax. Females are slightly larger and have reddish-brown hairs on its thorax. They are not aggressive and are not known to sting people. There is one 1 generation / year and time of adult activity varies with species. Males usually emerge before females. The males fly a few inches above the lawn, crawl around the ground, and in some cases enter nest holes in hopes of finding and mating with a female. The phenomena where males emerge before the females, is referred to as protandry, and is not uncommon in the insect world. Basically, by emerging first the males are ready and waiting when the first females emerge increasing the chance of their sperm making it to fertilize a female's eggs. It is not unusual to see a mass of bees clustered together in a



Above are the tumuli (opening with soil mounded around it) of nesting burrows of plasterer bees in a home lawn. Aggregations of these solitary bees are common in lawn areas with sandy soil and/or thin turf. Photo by P.M. Shrewsbury, UMD



The female plasterer bee, *Colletes thoracicus*, in the center has two male bees on her and several more trying to get to her. Who will be the father of her babies? Photo: P.M. Shrewsbury, UMD

bee frenzy in the grass (see image). When a female emerges from her overwintering burrow, several males will swarm her, all vying to be the one that will father of her young. Be sure to watch this fascinating video of the Colletid bees in the lawn and their interesting behaviors.

After adults emerge from the ground and mate, females begin foraging on flowers to collect food for her young. Most solitary bees have an area of stiff hairs, called a pollen brush or scopa, into which pollen grains are pushed. These hairs are located either on the underside of the abdomen or along the hind legs. It is a win-win situation. Plasterer bees get pollen for food; flowers get pollinated.

Are plasterer bees a pest? Plaster bees are considered pests by some. Although plasterer bees are solitary bees, they are referred to as gregarious nesters meaning it is common to see numerous, sometimes hundreds or more, bee burrows in the ground in the same location. Basically, plasterer bees exploit a favorable habitat when they find one. Plasterer bees like areas of lawns where the soil is somewhat sandy and well drained, and the turf is thin, especially south facing or sunny sites. Many homeowners find "hundreds" of soil mounds in their lawn unsightly. In addition, people who are not familiar with solitary bees or the fact that they docile and unlikely to sting, and that they provide the critical ecosystem service of pollination, tend to get a little anxious when they see hundreds of bees flying around their yards. Be sure to inform your clients, friends, etc. that these little guys are great pollinators and not aggressive! For environmental considerations we should try not to actively kill plasterer bees and avoid applying pesticides where they are nesting. If your client would prefer not to have the bees, I recommend two practices to reduce the abundance of bees in a lawn. The goal is to make the lawn habitat less favorable for the bees to use as nesting sites. One is to renovate the lawn area to improve the soil and develop a thick stand of turf. The other practice that I have been told works but have not seen research on, is to heavily water the area where the bees are nesting, making the site unfavorable and the bees will search out other nesting sites, although ultimately lawn improvement is likely needed. The spring is the time of year to do this to have the least detrimental impact on the bees when they are active and can search for other nesting sites. Hopefully, you can conserve these excellent pollinators and keep your clients happy!

Weed of the Week

By: Chuck Schuster, UME-Retired

The current weather has been extremely variable. The region has experienced warm periods and then almost immediately temperature drops. Moisture has been consistent with regular rainfalls which has assisted the pre emergent herbicides activation. Soil temperatures have only had one instance of warming up, but the critical temperatures for weed germination has not occurred. (Crabgrass and Japanese stiltgrass.) The warmest soil temperatures in the region are located near our larger population areas, lots of buildings and these temperatures are trending in the 48F range for the coolest temperatures of the day. If using the mdmesonet website information follow the 5 cm depth soil temperature. I tend to check what temperatures across the region do several times a day. The question of the day is, have you checked the soil temperature at 2 inches in the region where you are working. One indicator of the differences in temperatures overall have been the trees blooming along the roadside that are from the Bradford or Callery Pear family. It has been interesting in my travels the emergence of these trees in bloom over the last few weeks.

Both lawns and landscapes are starting to pop with color with some key weeds at this time. Three that I have noticed lately are purple deadnettle, common chickweed, and henbit. I have seen Purple Deadnettle, *Lamium purpureum*, in recent weeks in landscapes and mixed in areas of turf that are not often managed. It is similar to Henbit and proper IPM calls for good identification. The name Deadnettle comes from the fact that it will not sting you as opposed to stinging nettle, *Urtica*, which will. The two plants are not closely related but they do are similar. *Urtica* is that formic-acid wielding forb that zaps you with little stingers. Purple Deadnettle can be eaten.

Purple deadnettle is in bloom currently (Photo D) in many landscapes and lawns. In many areas cool season turf has yet to really show any signs of growing, thus allowing this to be noticed. Using the photos below, Photos B, C, and D, are examples of purple deadnettle. It is a commonly fall germinating, winter annual in the mint family. Henbit shown in Photo A, is also a fall germinating weed can be found in turfgrass and landscape settings throughout the United States. Purple deadnettle has square hollow stems (photos E and F), no basal leaves, and the leaves will be found on a short petiole (photo C), which distinguishes it from henbit, whose upper leaves are sessile or attached to the stem itself. Petiole length of the lower leaves will be longer than that of the upper leaves. The leaves of purple deadnettle will be opposite, slightly pubescent (occurring with hairs) triangular to round in shape with a toothed margin but are less deeply lobed than henbit. Upper most leaves can be triangular in shape. Leaf color will be dark green, with the upper leaves becoming purple or red. The stems are square in shape and can grow up to sixteen inches in height branching from the base of the plant.

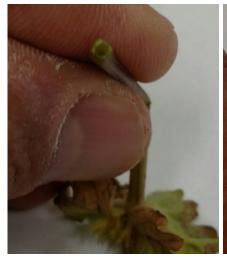
Flowers will occur in whirls of three to six in the upper leaves and will be purple in color. The root system is a fine and fibrous, and the plant produces a small berry about two mm in diameter. Purple deadnettle spreads by seed. This is an early spring pollen source for pollinators. Use caution when

Purple deadnettle prefers fertile and well drained soils. One can commonly see it now popping on many agricultural fields that have not been disturbed yet this spring. Cultural control of Purple Deadnettle includes proper use of fertilizers to build a strong turf, aeration of the soil to prevent compaction, and in most cases use of mulch to act as a weed barrier to prevent light from reaching the soil for germination. Fertilization in turf is always governed by the current regulations, soil tests and the UME recommendations coming from many years of research. This is an easy

weed to pull. This is not a difficulty weed to control in most settings. Soil disturbance in the fall will help this weed germinate, and monitoring at this time can help with removal.



All Photos: Chuck Schuster, UME





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Control of purple deadnettle can be started in the fall. Remember that a proper soil fertility program builds a strong and dense turf. Attempting to decrease soil disturbance can be difficult when core aeration is considered. Preventing it from being noticed in the spring starts with potential use of pre-emergent products. Fall application of Dichlobenil (Barrier) (pre emergent) can help prevent this weed from being an issue in the spring. IF the opportunity is missed, or if the needed moisture did not activate the herbicide prior to germination, the plant may be noticed in the early spring, but can be controlled utilizing post emergent products the will include using organic products pelargonic acid (Scythe), Burnout (citric acid products) and synthetic products including Imazaquin (Image), Metribuzin (Sencor) turf only, and 2,4 D + MCPP.

Plant of the Week

By: Ginny Rosenkranz

Ilex × *meserveae* 'Blue Prince' is also known as a blue holly. Both 'Blue Prince' and 'Blue Princess' were developed by K. Meserve in New York by crossing *I*. aquifolium or English holly and I. rugosa or Tsuru holly, a Japanese holly. Both of these hollies were very cold tolerant and the crosses that developed, 'Blue Prince' and 'Blue Princess', are also very cold tolerant in USDA zones 4-7. Holly plants are dioecious, meaning they are either male or females, and it is a common practice to plant one male holly for every 3-5 females. The blue hollies thrive in average moist, well drained, slightly acidic soils in full sun to part shade, especially afternoon shade. Plants grow into dense shrubs between 6-8 feet tall and wide, but can reach heights of 15 feet like the 'Blue Prince' in my garden. They have opposite, waxy blue green, glossy evergreen leaves with prominent spiny margins that are on purple stems. The flowers of both 'Prince' and 'Princess' are white with shades of green and bloom in May in small clusters around the base of the leaves. 'Princess' will develop very showy bright red berries in the autumn that will stay on the trees until spring. Blue holly can be used to create boarders, as a foundation plant, or hedges and screens. Pests can include holly leafminer, scale, spider mites and, whitefly. Diseases can include leaf spot, leaf rot, powdery mildew and tar spot. In soils with high pH, the leaves can develop chlorosis which can cause the yellowing of the leaves.



Ilex x *meserveae* 'Blue Prince' is cold hardy in USDA zones 4-7.

Photo: Ginny Rosenkranz, UME

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 **49 DD** (Martinsburg) to **164 DD** (St. Mary's City). The <u>Pest Predictive Calendar</u> 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.

Euonymus leaf-notcher caterpillar – egg hatch (37 DD)

White pine weevil – adult first activity (84 DD)

Eastern tent caterpillar – egg hatch (86 DD)

Boxwood spider mite – egg hatch (141 DD)

European pine sawfly – larva, early instar (154 DD)

Woolly elm aphid – egg hatch (163 DD)

Inkberry holly leafminer – adult emergence (165 DD)

Spiny witchhazel gall aphid – adult/nymph (171 DD)

Boxwood psyllid – egg hatch (184 DD)

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

Degree Days (as of March 27)

Annapolis Naval Academy (KNAK)	88	Baltimore, MD (KBWI)	101
College Park (KCGS)	91	Dulles Airport (KIAD)	118
Ft. Belvoir, VA (KDA)	114	Frederick (KFDK)	87
Gaithersburg (KGAI)	82	Greater Cumberland Reg (KCBE)	75
Martinsburg, WV (KMRB)	49	Millersville (MD026)	96
Natl Arboretum/Reagan Natl (KDCA)	145	Perry Hall (C0608)	71
Salisbury/Ocean City (KSBY)	121	St. Mary's City (Patuxent NRB KNHK)	164
Susquehanna State Park (SSQM2)	80	Westminster (KDMW)	114

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

Homeowner Questions for the Home and Garden Information Center

With the new gardening season underway, we want to remind nursery/garden center and landscape professionals that you can refer customers with home gardening questions to Ask Extension. This is a free University of Maryland Extension service, available to all MD residents. In addition, our Home and Garden Information Center has recommended soil testing labs, a Maryland Vegetable Planting Calendar, Home Lawn Fertilizer Guidelines that comply with the MD Lawn Fertilizer Law, and many other resources to support home gardeners. If you would like to add a logo/link to Ask Extension on your company's website, please contact christa@umd.edu.



Conferences

April 19-20, 2024

Youth Arboriculture Career Expo Location: Gallaudet University For more info: 202-826-6314

May 2, 2024

Pest Walk in Salisbury

Location: Salisbury University

May 22, 2024

MAA Pest Walk

Location: CMREC, Ellicott City, MD

June 4, 2024

MNLGA Program: Focus on Garden Centers Location: Ladew Gardens, Monkton, MD

June 5 and 6, 2024

Biological Control Conference for Greenhouses, Nurseries, and Landscapes Location: Central Maryland Research and Education Center, Ellicott City, MD

June 14, 2023

Eastern Shore Pesticide Recertification Conference

Location: via Zoom June 20, 2024

UMD Extension and MNLGA Technology Field Day for Nurseries

Location: Ruppert Nurseries, Laytonsville, MD

June 28, 2024

Procrastinator's Pesticide Recertification Conference

Location: Montgomery County Extension Office, Derwood, MD

September 17 and 18, 2024 (rescheduled from March)

Cut Flower Program

Locations: Central Maryland Research and Education Center, Ellicott City, MD and locations in Howard Co.

October 9, 2024

MNLGA Retail Day

Location: Homestead Gardens, Davidsonville, MD

Go to the <u>IPMnet Conference Page</u> for links and details on these programs.

Improve Your Diagnostic Skills

By: Stanton Gill

Karen Rane, Andrew Ristvey, David Clement, Nathan Glenn, Chuck Schuster, and I just finished up the 4-day IPM scout training program with a full house of students. With the Maryland Arborist Association, we have also set up two diagnostic sessions to help landscapers and nursery operators improve their diagnostic skills.

The first will be on May 2 starting at 11:00 a.m. and going until 2:00 p.m. and will be held at Salisbury University Campus on the Eastern Shore of Maryland. For more information, contact either Danielle Baur (danielle.rrconsulting@gmail.com) or Ginny Rosenkranz (rosnkrnz@umd.edu).

The second session will be an evening event which will be held at our new CMREC facility on May 20, 2024 from 5:00 p.m. to dark. This event will involve a dinner, diagnostic sessions with live plant material, and an action-packed, hands-on demo of a new drone that arborists can use to diagnose insect, disease, and cultural problems from the ground. To register for this event, contact Danielle Baur at danielle.rrconsulting@gmail.com.

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



Fereshteh Shahoveisi Assistant Professor fsh@umd.edu



Kelly Nichols Extension Educator kellyn@umd.edu

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