UNIVERSITY OF MARYLAND EXTENSION

TPM/IPM Weekly Report

for Arborists, Landscape Managers & Nursery Managers

Commercial Horticulture **July 31, 2020**

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)
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)

Seeds From China

By: Kim Rice, MDA

The Maryland Dept of Agriculture (MDA) has responded to nearly 500 calls and emails in reference to people receiving unsolicited seeds from China. MDA is working with the USDA Smuggling Interdiction and Trade Compliance office on this issue. All inquiries are being forwarded to them. We are asking people to notify us via our email: ppwm.mda@maryland.gov if you have received the seeds.

If you have the seeds and packaging please hold onto it; If the seeds have been planted in pots please stop watering them and set them aside; if they are in the ground we have asked them to leave them alone.

Further direction will come from USDA in the near future.

Ozone Damage to Cucurbit and Tomato Plants

Jerry Brust, UME

I have been seeing some ozone damage to cucurbits and oddly to tomatoes over the last 2 weeks or so, which is not unusual with the hot hazy conditions we are having. Ozone is the most common air pollutant in the eastern United States. On watermelon, the vegetable that is more susceptible than other crops, the damage starts off as small white spots or tiny asymmetrically shaped flecks that eventually become bleached areas (fig. 1). Flecks can be dark or light in color. These symptoms usually occur between the veins on the upper leaf surface of older and sometimes middle-aged leaves. Leaves later develop brown or black spots with white patches (fig. 1). The crown leaves of watermelon can look pretty ragged at this time of year, especially when fruits are maturing and plants are under stress. In muskmelons, the upper surface of leaves turns from a chlorotic yellow to a bleached white (fig. 2). Due to the tissue collapse produced by ozone, leaves are prone to infection by pathogens such as *Alternaria* sp., and generally will senesce more readily than non-damaged leaves.

Fig. 1 Ozone damage to watermelon crown leaves
Photo: G. Brust, UME

Fig. 2 Ozone damage to cantaloupe leaves
Photo: G. Brust, UME

I usually do not see much in the way of tomato with ozone damage, but a few fields have shown the symptoms of irregular dry-looking dark or light brown flecks usually starting on lower leaves (fig. 3). These flecks at times can look similar to bacterial spot (fig. 4). Bacterial spot lesions are dark brown to black and initially circular in shape and appear 'greasy', while ozone damage appears as dry flecks or damaged areas of the leaf. Bacterial spot lesions also are often surrounded by a yellow halo, ozone damaged areas will not have this yellowing appearance. Numerous bacterial spot lesions can coalesce causing a general yellowing of leaves (fig. 4).

Trying to estimate yield loss due to air pollutants in the field is difficult and only approximations can be made. In a California study, ozone damage to crops caused the greatest yield losses (10-30%) in watermelon, cantaloupe, grape, onion, and bean. Other research has shown that when average daily ozone concentrations are moderate to high, yields of vegetables can be reduced by 5-15%.

Fig. 3 Ozone damage to tomato leaves
Photos: G. Brust, UME

Fig. 4 Bacterial spot on tomato leaves
Photos: G. Brust, UME

Fine Fescue in the Heat

Mark Schlossberg, ProLawn Plus, Inc., sent in a photo showing what happens when fine fescue is mowed in 95 °F tempeartures.

This fine fescue lawn turned brown after being mowed when temperatures reached 95 °F
Photo: Mark Schlossberg, ProLawn Plus, Inc.

Aster Yellows in Echinacea

By: Karen Rane

We've had a number of inquiries about abnormal flower development in Echinacea lately. Flowers have stunted, greenish-white petals and there are green leafy growths protruding from the blossom centers. These are the symptoms of aster yellows, a disease caused by a bacterium-like microbe called a phytoplasma. The aster yellows pathogen is spread by phloem-feeding leafhoppers, primarily the aster leafhopper (*Macrosteles fascifrons*) and can infect over 300 plant species, including many herbaceous ornamentals, vegetables and weeds. Phytoplasmas are unusual in that they infect the insect vector as well as plants – leafhoppers acquire the pathogen by feeding on infected plants, and the phytoplasma multiplies and circulates within the insect's body. When infected leafhoppers feed on the phloem of another plant, the phytoplasma is transmitted. It can take one to 3 weeks after infection for symptoms to develop in plants.

Figure 1. Echinacea cv. Pow Wow White with stunted, greenish flowers symptomatic of aster yellows disease. Normal flowers are in the upper right section of the photo.
Photo: Connie Bowers, Garden Makeover Company

Because the infection is systemic throughout an infected plant, plants are not "cured" by removing symptomatic flowers – the entire infected plant should be removed to reduce the amount of inoculum in the planting. Remove weed hosts, such as wild carrot, field daisy, dandelion, and thistle that can harbor the pathogen. More information on aster yellows can be found at this link from the Missouri Botanical Garden.

Eyed Click Beetle

David Keane, Howard County Recreation and Parks, found an eyed click beetle this week. The larvae of this beetle feed on other insects. Check out Mike Raupp's July 16, 2012 Bug of the Week article to find out why the word 'click' is part of its name.

The very noticeable eye spots on the eyed click beetle are believed to confuse predators
Photo: David Keane, Howard County Recreation and Parks

Japanese Beetles

Debby Smith-Fiola, Landscape IPM Enterprises, found Japanese beetles feeding on Japanese dappled willow. Debby noted that the willows were already stunted because of the late frost damage, and now attacked by Japanese beetles. She reported there was skeletonizaton/defoliation by the adults (avoiding the newest growth).

Japanese beetles have been feeding along the stems of dappled willow, but not on the tips
Photo: Debby Smith-Fiola, Landscape IPM Enterprises

As we move into August, look for Scolia wasps that feed on Japanese beetles. They will be visiting flowers as well as flying over infested turf areas.

Spined Orbweaver Spider

Nancy Woods, MNCPPC, found a spined *Micrathena gracilis* spider this week. According to the MD DNR website on spiders, *Micrathena* species are the ones you are most likely encountering when you walk into spider webs along a wooded trail in the state. DNR also notes that *M. gracilis* is the most common of this genus found in Maryland. They feed mostly on small flies, gnats, and mosquitoes.

The female spiny orbweaver spider has spines; the male does not
Photo: Nancy Woods, MNCPPC

Correction to July 24, 2020 Report

Karen Rane noted that there was an error in last week's newsletter. In the section titled "Tough Times for Organic Fruit after Wet Spring", you published Mark Schlossberg's photo with an incorrect disease name. The the photo is identified as "cedar-apple rust on hawthorn fruit", but it is not cedar apple rust. The disease in the photo is cedar quince rust on hawthorn, which is a different species of rust than cedar apple rust.. There are a number of Gymnosporangium species that cause these rust diseases, and they don't all have the same symptoms or signs. Fruit infection of hawthorn is quite distinctive and in my experience the long aecial structures on hawthorn fruit are always due to cedar quince rust.

Bagworms

Jim McWilliams, Maxalea, Inc., found bagworms on a row of arborvitae in area along the Baltimore County - Baltimore City line. We are getting to the end of feeding by bagworms so a lot of the damage has already been done for the season.
Control: Options include spinosad (Conserve), Acelepryn, Mainspring, Orthene, and Astro. In light infestations, hand picking off bags is an option.

Bagworms have damaged these arborvitae in Baltimore
Photo: Jim McWilliams, Maxalea, Inc.

Armored Scale on Black Gum

By: Stanton Gill

Marie Rojas, IPM Scout, sent an interesting armored scale into our lab. It was an armored scale on *Nyssa sylvatica*, commonly called black gum or sweet gum. The scale is named *Chionaspis nyssae.* It turns out that this tree has many common names. Some people call it black tupelo, but is also known in various areas as a gum tree, sour gum, bowl gum, yellow gum or tupelo gum. Still others call it beetlebung, stinkwood, wild peartree, or pepperidge. Whatever you want to call it, *Nyssa* sylvatica is susceptible to this armored scale. The concern is this native tree is getting more and more popular in the nursery trade. We need you to examine your trees closely for this armored scale and try to prevent it from spreading around into the landscape. It is a foliage feeder so materials such as Dinotefuran or Altus should work well.

The armored scale, *Chionaspis nyssae*, infests black gum
Photo: Marie Rojas, IPM Scout

A pair of the armored scale, *Chionaspis nyssae*, is shown clustered together with the male on top and the female below

Redheaded Flea Beetle in Nurseries

By: Stanton Gill

A couple of weeks ago, I mentioned in the weekly IPM alert that we were working with a group of University Extension specialists on the East Coast on redheaded flea beetle research and control. Danny Lauderdale of NC State Extension sent up some of his field research results that may help growers with redheaded flea beetles.

"The info below starts at the beginning of the season and larvae drenches mentioned are best targeting first generation.

If you wait until larvae are hatched and present in substrate, I can say that based on two different trials I have done that acephate (I used Acephate 97UP at 12 oz./100 gallons) as a drench resulted in 92% control in the first study and 100% control in the second. Three other products worked well in one study but I have not had the chance to repeat their use yet. They were chlorpyrifos (Dursban 50W at the highest rate of 16 pounds per 100 gallons--not practical in my opinion and has a 24 hour REI on top of that, did give 100% control and I may repeat at a lower rate and/or with different formulation), *Isaria fumosorosea* (Ancora--microbial insecticide at 28 oz. per 100 gallons, gave 94% control), and Millenium (*Steinernema carpocapsae*--beneficial nematodes at 250 million per 100 gallons, gave 100% control). Acephate works well and is inexpensive and only a 12 hour REI. Any of the effective treatments would need to be made once larvae have hatched and are found on edges of root balls. You can begin finding high numbers of hatched larvae as early as 250 GDD for plants overwintered in houses or as late as 500 GDD for those left outdoors and jammed. At most nurseries I have scouted in eastern NC with plants overwintered outside and jammed with winter protection placed on them only during the coldest periods of winter, I usually find larvae active in substrate at or just after 400 GDD.

Note that drench volume should be determined by taking about 10 plants and doing a pour-thru starting with 4 ounces of water per gallon container size and increasing it until you just start to get dripping from containers, then back off 1 to 2 ounces. Once the volume to drench to the point just before leaching is determined then use that volume to calibrate your per container drench time with your equipment.

If you want a treatment that can be applied before larvae hatch from eggs then here are my one time results: (plants were treated at 200 GDD) (all are drench applications except for the Marathon 1G, which is a granular topdress application)

acephate, Acephate 97UP, 12 oz./100 gal., 94% control
thiomethoxam, Flagship 25 WG, 8 oz./100 gal, 100% control
imidacloprid, Imidacloprid 2F (10.6 oz./100 gal.), Marathon 1G (1 tsp/1 gal topdress), Marathon II (1.7 oz./100 gal), 100% control
azadirachtin, Azatin O (16 fl. oz./100 gal), 96% control
dinotefuran, Safari 20SC (16 oz./100 gal), 100% control

--note that based on observations from my trials and conversations with other researchers that the neonicotinoid treatments above will provide protection of foliage with these applications as well (I have not taken data on this, just anecdotal observations). Neonicotinoids do not provide great protection as a foliar spray from injury if beetles are already present in large numbers and actively feeding when applied based on the IR-4 research results. Even if applied prior to adult emergence the protection is going to be short compared to drench or granular application.. Drenches are more effective there also based on the IR-4 work. Granular imidaoprid will last longer.

A third option could be pretreating plants with foliar applications of one of the neonicotinoids about 1 to 2 weeks before expected adult emergence. You may have to track and keep records of GDD related to adult

emergence for a year or two before you are able to try this. Adults usually emerge as early as 500 to 800 GDD. The lower end is for plants overwintered in structures and the higher end is for those just jammed outdoors and covered only during coldest winter temps. No research done on this but I have a grower that swears by it and Brian Kunkel at University of Delaware and JC Chong at Clemson agree that timing is better than neonicotinoid applications once adults are present.

Mainspring is a systemic drench option if neonicotinoids can't be used but does not work as well. With any of these, a weekly to biweekly contact rotation is needed to control them in the most desirable species like the two you mentioned. Rotate insecticide classes each time.

Additional information on drench applications to control first generation larvae:

-In an additional study acephate as Acephate 97 UP at 12 oz./100 gallons gave 100% control.
-*Isaria fumosorosea* tested as Preferal from SePro once and as Ancora from OHP twice yielded variable results ranging from 31%, 94%, and 5 % respectively.
-*Steinernema carpocapsae* as Millenium from BASF has provided 100% and 98% control in two different studies.

Other systemic insecticide notes: (note that long term results will be variable based on overall nursery red headed flea beetle infestation levels)

-Cyclaniliprole tested as Mainspring GNL from Syngenta is a good alternative to neonicotinoid drench prior to first generation egg hatch and has provided 75% and 89% control in two studies.
-Neonicotinoids thiamethoxam, imidacloprid, and dinotefuran applied as drenches prior to first generation egg hatch has consistently provided 97% to 100% control of 1st generation larvae.
-Granular imidacloprid formulations may be a good option in some cases if cost can work with a grower's production system and client preferences are not prohibitive. Very effective at preventing noticeable foliar damage for many months if incorporated in substrate as labeled or applied as a topdress as labeled shortly after potting (data not analysed yet but raw data show the greatest foliar damage to any individual plant over a 1 year period with no other insecticide applications was 7%). Drenches of thiamethoxam and imidacloprid to liners just prior to potting or just after potting provided similar results. Dinotefuran can give good short-term (a few months) protection if applied as a liner drench just prior to potting."

Darkling Beetle That Feeds on Plastic

By: Stanton Gill

Science magazine published an article on a darkling beetle species that may be fairly useful. A joint research team consisting of Professor Hyung Joon Cha and a doctoral student Seongwook Woo of the Department of Chemical Engineering at POSTECH with Professor Intek Song of Andong National University has uncovered for the first time that the larvae of the beetle in the order Coleoptera. (*Plesiophthophthalmus davidis*) can decompose polystyrene, a material that is tricky to decompose. The research team found that the larvae of a darkling beetle indigenous to East Asia including the Korean peninsula can consume polystyrene and reduce both its mass and molecular weight. The team also confirmed that the isolated gut flora could oxidize and change the surface property of the polystyrene film. Meanwhile, the research team isolated and identified *Serratia* from the intestinal tract of *P. davidis* larvae. It was found that the gut flora of this larvae consisted of a very simple group of bacterial species (less than six) unlike the gut flora of other conventional polystyrene-degrading insects. These research findings were recently published in the online edition of *Applied and Environmental Microbiology*, a long-standing authoritative journal in applied and environmental microbiology.
Original Source: http://www.postech.ac.kr/eng/a-new-species-of-darkling-beetle-larvae-that-degrade-plastic/#post-21063C

Bacterial Leaf Scorch

By: Rachel Ross & Karen Rane, UMD

Symptoms of bacterial leaf scorch (BLS), caused by the bacterial pathogen *Xylella fastidiosa,* are likely to develop in the next few weeks on shade trees in our region. *X. fastidiosa* is vectored by a variety of xylem-feeding insects including sharpshooters, treehoppers, and spittlebugs. Symptoms develop on foliage as browning margins ("leaf scorch") (Figure 1), often with a dark brown or yellow "halo" between the green and brown tissue. Hosts include elm, oak, sycamore, maple, gingko, and sweetgum. Systemic spread in addition to repeated infection in subsequent years can result in significant branch dieback and tree decline, particularly in trees with site stress issues.

Fig. 1: Bacterial leaf scorch symptoms on red oak
Photo: Karen Rane, UMD

Maintaining tree vigor and reducing overall stress can help slow the progression of symptom development. Mulching and timely irrigation can reduce water stress. The growth regulator product called Cambistat (paclobutrazol), available to commercial arborists, has been used to help delay or reduce leaf scorch symptoms in infected trees. This material does not cure infected trees, but has been reported to improve foliage appearance.

Good Wasp Activity

By: Stanton Gill

Christa Carignan, HGIC, found her mountain mint flowers were active last week with a large wasp that looked like a smaller version of a cicada killer. Christa shot some great pictures. This wasp is *Bicyrtes quadrifasciatos*. Wasps in this genus feed on Pentatmoid insects – otherwise known as stink bugs. It is a great predator to have in a landscape.

Several years ago, we set up a program with Cavano's Perennials to attract beneficial insects. Mountain mint was an excellent long season flowering plant that pulled in many beneficial wasps including this one. I planted a large plot of mountain mint in my orchard to attract beneficials, and it has been very active with predator activity over the last week or two and will continue into September. We need to take advantage of all the good guys we can get.

bugs
Photo: Christa Carignan, HGIC

Skip Laurel and Its Problems

By: Stanton Gill

Mark Schlossberg, ProLawn Plus, Inc., sent in these great shots of a skip laurel in a Baltimore County landscape. He said the laurel was infested with white prunicola scale earlier and now it has oozing sap on the trunk this week. The oozing is from peachtree borer. We reported flight activity of the adult males 4 weeks ago and suggested protective sprays of either permethrin or bifenthrin which should have been applied over the last couple of weeks. The oozing sap is the plant trying to drown out or expel the larvae that is feeding in the cambial tissue.

This skip laurel has been severely damaged by peachtree borers and white prunicola scale
Photos: Mark Schlossberg, ProLawn Plus, Inc.

Powdery Mildew on Phlox

By: David L. Clement

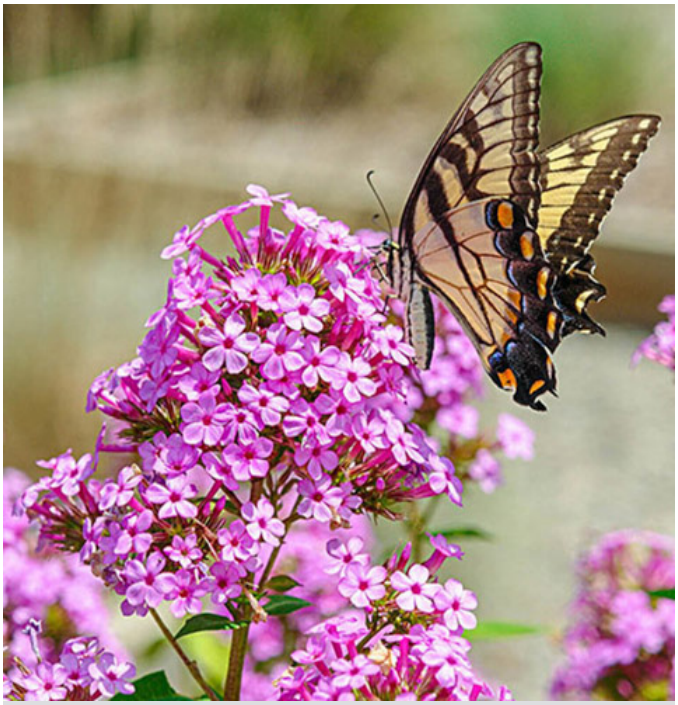
Powdery mildew on garden phlox is caused by the fungus *Golovinomyces cichoracearum* (formerly *Erysiphe cichoracearum*). The disease infects both leaves and stems of susceptible phlox cultivars and is favored by weather conditions of high humidity with morning dew formation. The white surface growth seen is composed of both mycelium and fungal spores. While the fungus grows on the leaf surface, it also produces structures called haustoria that penetrate into the leaf cells to obtain nutrients. The pathogen produces overwintering spore structures called chasmothecia in the late summer that will start the disease cycle again next spring. Infection occurs first on the lower leaves which leads to yellowing and browning and frequently causes defoliation by midsummer. In extreme cases, defoliated plants may be unable to survive the winter.

- Management: Space plants for good air circulation and plant in full sunny locations. Select resistant cultivars to minimize disease severity. Many phlox cultivars were evaluated at Mt. Cuba Center during the 2015-2017 seasons, and the most resistant cultivars are rated in their trial report. Some of the best cultivars of *Phlox paniculata* were: *Phlox paniculata* ‘Jeana’, ‘Glamour Girl’, ‘Delta Snow’, ‘Lavelle’, ‘Robert Poore’, ‘Dick Weaver’, ‘David’, ‘Ditomdre’ (Coral Crème Drop), ‘Shortwood’, and the

hybrid *P.* × *arendsii* 'Babyface'. The best performing selections from other species of sun-loving phlox were: *Phlox carolina* ssp. *carolina* 'Kim', *P. glaberrima* 'N^3 Tasache rvfo hakof' (N^3 Springfall), *P. carolina* 'Bill Baker', *P. glaberrima* 'Morris Berd', *P.* 'Forever Pink', *P. amplifolia*, and *P.* 'Minnie Pearl'.

View the full report at: https://1x848d9mftq5g9wx3epiqa1d-wpengine.netdna-ssl.com/wp-content/uploads/2017/12/MtCuba-Phlox-Report.pdf

Powdery mildew can be a problem on phlox
Photo: David Clement, UME



Phlox 'Jeana' is a powdery mildew resistant cultivar
Photo: David Clement, UME

Dogwood Sawflies

Elaine Menegon, Good's Tree and Lawn Care, found later instar dogwood sawflies last week feeding on yellow twig dogwood in Marietta, PA. Dogwood sawflies will eat all but the midrib of the leaf. These sawflies overwinter in the last instar stage. After the second molt, the bodies of the larvae become covered with a white powder-like material to mimic bird droppings which helps to protect them from their enemies. At their final molt they have a spotted pattern to camouflage them as they crawl over leaf litter. There is only one generation per year.

Control: The sawflies have done most of their damage for the year. Next year, scout for this sawfly and control early with materials such as Conserve and synthetic pyrethroids.

In this instar, dogwood sawflies resemble bird droppings which helps protect them from predators
Photo: Elaine Menegon, Good's Tree and Lawn Care

Beneficial of the Week

By: Paula Shrewsbury

Where are all the butterflies? (Part 2)

In last week's IPM newsletter (7/24/2020) we asked the question "Where are all the butterflies?" I would like to continue the discussion this week. The phenomenon is that there are far fewer butterflies active this year than last year; the question is why? This phenomenon has been noted by many of you who read this newsletter, the general public, and Lepidopterists (those that work with butterflies and moths), and yearly butterfly surveys are down in some areas. Last week we discussed two major factors that can strongly influence Lepidoptera (butterflies, moths, caterpillars) abundance. They were natural enemies (top-down factors) and food resources (bottom-up factors). When you think about food webs, plants are the primary producers and at the "bottom" of the food web. Weather, and other factors, can influence the quality and availability of food resources. Next in the food web are herbivores (ex. many Lepidoptera), the consumers of the plants. Above (on top of) the herbivores in the food web are the natural enemies, who consume the herbivores. Both top-down and bottom-up factors can be major influences on herbivore populations.

A few weeks ago, the zebra swallowtails were flying on the C&O canal. They were busy feeding on nectar from flowers and searching for pawpaw trees to lay their eggs. Click here to see a video of the zebra swallowtail caterpillar on pawpaw. I hope to see them soon on the pawpaw foliage.
Photo: M.J. Raupp, UMD

This week I want to mention another important factor that might explain the low abundance of Lepidoptera this year. That is the **direct effect of weather on the survival or mortality of Lepidoptera**. Insects have a diversity of physiological and behavioral methods to protect themselves from cold that allows them to survive the winter successfully. These measures can be used by adult and immature and egg stages of different insects. Physiological methods include the process of supercooling, which use cryoprotectants (anti-freeze like compounds), or diapause. Behavioral methods can include migration to warmer areas or finding protected locations (ex. rocky outcroppings, under tree bark, deep in the soil). For more detail on how insects survive winter, go to the Beneficial of the Week (Nov. 2, 2018).

These amazing adaptions of insects to survive winters have led, in part, to their survival over millions of years. However, when the weather plays tricks on insects, then there is a problem. If you recall earlier this year (2020) we had some extreme weather conditions (patterns often associated with global warming). In February, the weather was unusually warm, followed by three unusual significant frosts in May. It is likely that the overwintering stage of the Lepidoptera, ex. pupa, was physiologically prepared to emerge or had already started to emerge. They had "turned off" their cold weather defense thinking it was time. Then the late frosts came and hit the pupa (or whatever stage) hard resulting in high mortality. With three late frosts' the mortality could have been great and resulted in the low Lepidoptera numbers we are seeing this season. Some of you may say "but urban areas are warmer" or "I did not have a hard frost where I live". Well butterflies can travel long distances. Many of the butterflies you often see have likely spent winters in other locations, maybe more rural areas that were hit by the late frosts.

A study out of Missouri (Marquis et al. 2019) found that insect communities on oak declined 23-16 fold depending on oak species, insect size and its feeding guild, after spring frosts and/or drought in summer. Moreover, it took 1 to 4 years for the populations to return to pre-frost densities. Please do what you can to reduce factors that lead to global warming. Extreme weather conditions have a detrimental impact on Lepidoptera is just one of many negative impacts that can happen.

Weed of the Week

By: Chuck Schuster

Hot and dry weather has predominated over the last several weeks. Weeds are seemingly less stressed than many of the desired species of plants we are responsible for managing. Weed management has been a challenge this year. The normally cool to cold months of December, January, and February were actually cool at best, and in some ways warm. This allowed many weeds to either only slow down or actually germinate earlier than normally considered as part of the management plan. Late frosts and in some cases freezes hurt desired plant species. Weed control products applied early, starting in February in some cases, have at this point utilized all of the efficacy, and are no longer providing the suppression and control desired. This year demonstrates the need to apply products at less than the total rate early, and split the applications into two or three different applications. This does mean repeat visits to a site, but helps spread product efficacy over a much longer period of time. Watching soil temperatures to determine when the soils start to cool off is another tool that needs to be utilized. As soils cool in August and September, the fall germinating weeds start to come on. *Poa annua* germinates when soil temperatures drop below 70 °F, ideally when soil temperatures reach 66 °F. (No worry we are in the upper 70's and low 80's currently). Mulching and landscape clean-up started very early this year means that the granular products often used when renewing mulch have lost a great deal, if not all, effectiveness at this point in late July.

1. Jimsonweed produces a large purple flower
Photo: Chuck Schuster

Jimsonweed, *Datura stramonium*, is showing itself in many areas currently. It seems to be thriving in the warm temperatures. Primarily a weed found in pastures or agronomic crops, it can be found in turf and landscape settings. Jimsonweed is a summer annual. It has a distinctive odor, purple flower, and a deep-branched taproot. The odor is unpleasant to most and will be more notable when touched. The leaves are three to eight inches in length and up to six inches in width (photo 2). The leaves do not have hairs and are be attached by way of a one to two inch strong petiole. Leaves are toothed and a green to maroon color (photos 2 and 3). Purple flowers (photo 1) produce a seed pod that has thick, stiff thorns. The pod will divide into four segments at maturity. Stems of jimsonweed are thick and hollow. Care should be taken with this plant, as it is poisonous. Even skin exposed to the fluid from the plant when using string trimmers have made some people ill.

2. Note writing pen for scope of size of a jimsonweed leaf
Photo: Chuck Schuster

3. Jimsonweed leaves are green to maroon
Photo: Chuck Schuster

Cultural control includes pruning the plant close to the base, mowing in turn, and careful hand pulling (with gloves) early in the season in landscape. Chemical control of this weed can be obtained using Snapshot in the landscape as pre emergent and general post emergent broadleaf herbicides in the turf and non-managed areas, which could include 2,4D products. Post emergent control in the landscape can be obtained using glyphosate products with an appropriate surfactant when not included with the product, Prizefighter, when applied before the plant is bigger than 1 foot tall, and Burnout. Prizefighter and Burnout may take more than one application.

Plant of the Week

By: Ginny Rosenkranz

Hibiscus moscheutos is a native herbaceous perennial with almost woody stems. There are a lot of hybrids now that are a mix of *H. moscheutos, H. coccineus*, and *H. laveis,* but what they all have in common is that they bloom with beautiful, brightly colored round flowers in the late summer when most other plants are done. A new series from Proven Winners is the Summerific® Hibiscus, which carry their flowers not only on the top of each stem but also along the stems, giving the hot summer gardens even more flowers to enjoy. Summerific® 'Berry Awesome' *Hibiscus* is a compact grower, forming a 4 ½ - 5 foot tall and wide rounded mound. Plants are winter hardy from USDA zones 4-9 and prefer to grow in moist, rich soils, flowering best in full sun. The huge lavender pink flowers have ruffled petals that are lined with a deeper rose color and a deep rose center eye. These beautiful flowers with overlapping petals expanding up to 8-9 inches across may only last 1 day, but the rest of the buds will continue to bloom in succession from mid-summer into the late fall. Dead heading the spent flowers will encourage new flowers to continue to bloom. 'Berry Awesome' has bright green maple leaf-shaped leaves that are colorful all summer. In the very late fall after the plants have dropped all their leaves, they should be cut down to about 2-4 inches off the ground to show where they had been growing, and in the late spring the new foliage will begin to emerge. All hibiscus are the last of the herbaceous perennials to emerge in the spring and it can be easy to forget exactly were that big, beautiful plant was while in the midst of spring planting. Summerific® 'Berry Awesome' *Hibiscus* can be planted in as a specimen, a summer hedge, or in a rain garden. They also thrive when planted along a stream, by a natural pond, or in a pond on a floating island. Although deer leave the Summerific® 'Berry Awesome' *Hibiscus* alone, there are pests that can attack the plants including Japanese beetles, sawflies, whiteflies, and aphids. Diseases can occasionally be problematic such as leaf spots, blights, rust, and cankers. If plants are allowed to dry out, scorch will singe the leaf margins.

Hibiscus 'Berry Awesome' flowers can be up to 9 inches across
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 1847 DD (Cumberland) to 2570 DD (Reagan National). 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.

- Orangestriped oakworm – egg hatch / early instar (1917 DD)
- Maskell scale – egg hatch / crawlers 2nd gen (2035 DD)
- Euonymus scale – egg hatch / crawlers 2nd gen (2235 DD)
- Japanese maple scale – egg hatch / crawlers 2nd gen (2508 DD)
- Fall webworm - egg hatch/active caterpillar tents 2nd gen (2793 DD)

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

Degree Days (as of July 29)

Aberdeen (KAPG)	1965
Annapolis Naval Academy (KNAK)	2265
Baltimore, MD (KBWI)	2329
Bowie, MD	2394
College Park (KCGS)	2187
Dulles Airport (KIAD)	2226
Frederick (KFDK)	2189
Ft. Belvoir, VA (KDA)	2322
Gaithersburg (KGAI)	2107
Greater Cumberland Reg (KCBE)	1847
Martinsburg, WV (KMRB)	1982
Natl Arboretum/Reagan Natl (KDCA)	2570
Salisbury/Ocean City (KSBY)	2302
St. Mary's City (Patuxent NRB KNHK)	2476
Westminster (KDMW)	2281

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

Hone Your Diagnostic Skills With These Upcoming LCA Webinars

Tree Problems—Diagnostic and Solutions

Thursday, August 20 | 10:00 am–11:30 am ET

Karen Rane, David Clement, and Stanton Gill of the University of Maryland Extension will cover diagnostic skill building for dealing with major tree problems caused by physiological conditions, disease, and insects. Participants will learn the steps in diagnosing tree problems. The team will cover major current tree problems in 2020 in the landscape and what you do to control these diseases and pests using IPM methods based on our and other university research efforts. An audience interactive question and answer session will be held at the end of the presentation.

Go to https://www.lcamddcva.org/ to register

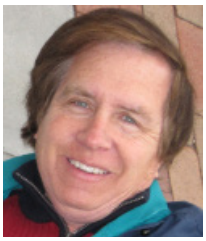
Climate and Sustainability Webinars, 2020

Dr. Sara Via, Professor & Climate Extension Specialist, University of Maryland, College Park

Upcoming Programs:
July 29, 2020 What can the pandemic teach us about being (un)prepared for climate change and other global disasters?
Aug. 12, 2020 The power of individual choice: what can individuals do to combat climate change and how much difference will it make?
Aug. 26, 2020 Climate change is bad for your health

See the brochure for more information and a link to register.

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

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.