

Commercial Horticulture

June 15, 2018

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IPMnet
Integrated Pest
Management for
Commercial Horticulture

extension.umd.edu/ipm

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

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Weed of the Week: Chuck Schuster (Extension Educator, Montgomery County)

Cultural Information: Ginny Rosenkranz (Extension Educator, Wicomico/Worcester/Somerset Counties)

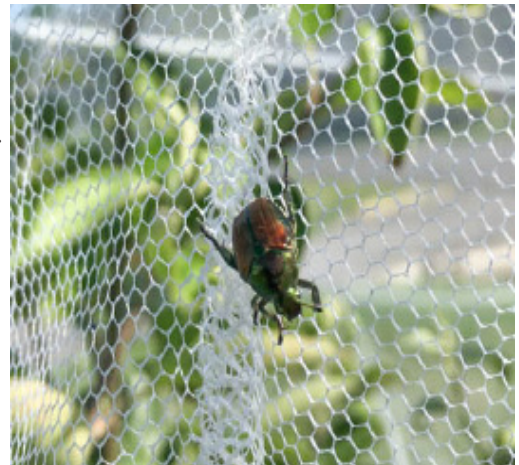
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Japanese Beetles

By: Stanton Gill

Remember the summer of 2017? It was not as rainy as this year, but still the rains extended into the end of July. The rain last July was perfect for survival of newly hatched Japanese beetle larvae in turfgrass areas. Well, guess what? They are starting to pupate in the soil and we had the first photo of an adult sent to us from Ethan Chappell, Environmental Quality Resources, in Millersville. Expect to see adults cropping up over the next week or so. Let me know where you are seeing activity in the state. Contact me at Sgill@umd.edu.



The first report of an adult Japanese beetle is from Anne Arundel County
Photo: Ethan Chappell, Environmental Quality Resources

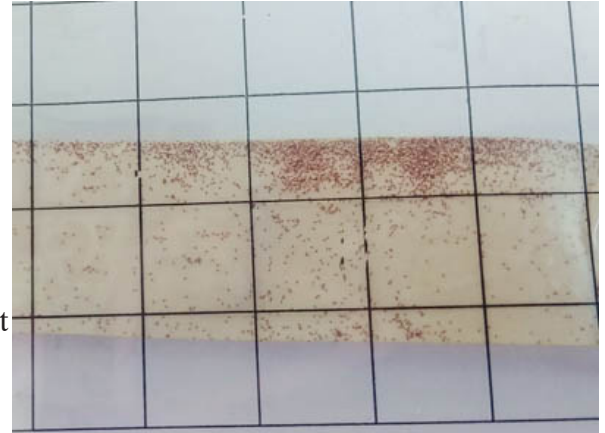
Adult control: Two of the better materials we have tested out over the last two years are Mainspring and Acelepryn (8 oz/100 gallons of water as a foliar spray). We obtained 10-14 days of control (Gill and Kunkel 2015-2016). I spoke with Nancy Rechcigl, Syngenta Company, and she said some growers are reporting good control at rates as low as 4 oz/100 gallons. Once adult beetles start feeding on foliage, many plants release volatiles that attract more beetles onto the plant. Control on highly susceptible plants needs to start before damage gets ripping.

Japanese Maple Scale

By: Stanton Gill

An alert nursery grower caught the first crawlers of Japanese maple scale on June 12. She caught the small, purple crawlers on sticky tape with the sticky side aiming outward.

Japanese maple scale is one of the most dreaded armored scales in nurseries and landscapes. The crawler period of this first generation (2 generations per season) has just started, and the crawlers will continue emerging for the next 6 – 7 weeks. In a week or so, I recommend applying either Talus or Distance (insect growth regulators) to control the crawler stage. We have a [fact sheet](#) on this scale insect on our IPMnet website.



All of the purple dots on this tape are Japanese maple scale crawlers; tape wrapped around tree branches is a good way to monitor for crawlers of this scale
Photo: A Maryland nursery grower

Euonymus Scale

By: Stanton Gill

Paul Wolfe, Integrated Tree Care, called to report heavy populations of euonymus scale in Bethesda. This scale is a major pest of euonymus, but it will also infest pachysandra and boxwood. Look on the undersurface of leaves for white male covers and on bark for brown female covers. Look for leaves spotted yellow on the upper surface and for dieback. If you find samples in your area, please send them in so we can see at which life stage they are presently. Our address is University of Maryland, CMREC, 11975 Homewood Road, Ellicott City, MD 21042.

Scout plants to see if crawlers of the first generation are active. Look for second generation crawlers in late July into August. Before spraying, check for the presence of beneficials such as lady beetle larvae and adults. A mixture of 1% horticultural oil and pyriproxyfen (Distance) or buprofezin (Talus) can be used when crawlers are active.



University of Maryland
Feeding by euonymus scale causes yellow spotting on foliage

Cryptomeria Scale

Marie Rojas, IPM Scout, found eggs under the covers of female cryptomeria scale on *Abies koreana* in Beallsville. Crawlers will be active June through July with a second generation in August and September. Look for yellow spotting or banding on the needles.

Monitoring: Cryptomeria scale prefers hemlock, fir, and pine (not cryptomeria). Crawlers are yellow and usually appear in June and August. All stages of cryptomeria scale are found on the underside of needles. The covers of the adult females are elongated, oval and translucent to light brown. Male covers are similar but smaller. Also, look for holes in the scale's wax covering indicating parasitoid activity.

Control: When the majority of the eggs have hatched (crawlers), it is the optimal time for control. Apply pyriproxyfen (Distance) or buprofezin (Talus) mixed with 0.5 - 1% horticultural oil for control. If there is parasitoid activity, use only insecticidal soap or oil sprays. Be sure to get good contact for best control.

Winter Damage – Some Plants Make an Attempt at a Comeback

By; Stanton Gill

Over the last couple of issues, we have published several articles about winter damage on plants. The severe cold in January and February killed back many plants. I am seeing some of the plants trying to make a comeback in June. The excessive rains are probably helping to a degree. A crape myrtle planting site that I looked at this week with a landscaper in Olney had severe winter dieback on several plantings. One plant had one new sprig of growth coming out. It is a weak comeback. The landscaper will probably end up replacing the plant since it will not look good until fall, but a comeback is occurring.



A second tree was my own cutleaf Japanese maple that had severe dieback from the January cold. I pruned out major branches this spring. The plant is attempting to recover with new shoots coming out.



Several landscape managers have told me that their customers' figs were killed to the ground this winter, even 'Chicago Hardy', which is one of the toughest figs for our area. I am starting to get emails with pictures of tiny new shoots coming up from the bases of these severely damaged figs. Figs usually recoup since the root system is hardy to -40 °F. The tops are not that hardy, but they can recoup, even after a severe winter.

A crape myrtle (above) and a cutleaf Japanese maple (below) are trying to put out new growth in June after such a cold winter
Photos: Stanton Gill, UME

Powdery Mildew

Marie Rojas, IPM Scout, found powery mildew on dogwoods, including *Cornus florida* 'Jean's Appalachian Snow', 'Kay's Appalachian Spring', and 'Cherokee Princess' in Beallsville on June 13. The Appalachian series is listed as resistant to powdery mildew, but these cultivars are heavily infected this year.



Cornus florida 'Jean's Appalachian Snow' is listed as resistant to powdery mildew, but infection is heavy on this cultivar this year
Photo: Marie Rojas, IPM Scout

Cool New Plants' Seminar Coming This Fall

By: Stanton Gill

I met with the MNLGA staff this week and we are planning out a seminar on new plant species for the commercial horticulture industry. If you are a “plant nut” or want to find out how to make MORE MONEY with new plant species, then mark your calendar for October 25. We will hold the seminar at Country Springs Nursery in Woodbine, MD. Details will be released when they are available this summer.

Shot Hole Disease on Cherry Laurel

Bob Kestell, Natural Selection Turf, found a planting of cherry laurel with shot hole disease. A fungi, *Blumeriella jaapii*, and a bacteria, *Xanthomonas pruni*, are two pathogens that can infect cherry laurel. Both diseases are favored by wet weather. These diseases will continue to infect leaves throughout the growing season if rainy weather persists. Foliar symptoms begin as brown or reddish-brown leaf spots. They cause necrotic spots that eventually cause the plant tissue to drop out leaving a hole behind. These holes can look a lot like damage from insect feeding.



Shot hole disease is common on cherry laurel
Photo: Bob Kestell, Natural Selection Turf

Management of these “Shot-Hole” diseases in the landscape is difficult because it requires treating on a regular schedule early in the season. Cultural methods of reducing disease inoculum can help. Remove older heavily damaged or poorly growing plants. Try to adjust plant spacing to allow better air circulation to promote faster leaf drying and remove fallen leaves in the fall to reduce overwintering pathogens.

Fungicides may help if the cause of the disease is the fungal pathogen. These treatments only provide preventative disease management or slow down the rate of disease development and will not cure already infected leaves. Therefore, early sprays have to start as the new leaves are expanding and continue while rainy periods persist. Three fungicides for landscapes include Eagle (myclobutanil), Protect DF (mancozeb) and Cleary’s 3336 (thiophanate methyl). Be Sure to Check all Label Instructions.

White Pine Aphids

Heather Zindash, Mainscapes, Inc., found white pine aphids on white pine in Elkridge on June 12. The aphids were being groomed by large ants which feed on the honeydew produced by the aphids. There are several generations a year. Look for flagging and discoloration of needles.

Control: These aphids overwinter as black eggs on needles. Dormant oils can be used in winter if needed.



White pine aphids overwinter as black eggs on needles
Photo: Heather Zindash, Mainscapes, Inc.

Fall Webworms

The first generation of fall webworms continues to be active this week. Mark Schlossberg, ProLawn Plus, Inc., found caterpillars in Cockeysville on June 11. Olivia Leseman, Savatree, found them in Great Falls, VA on June 12. They feed within the webbing which is around the tips of branches. There are two generations per season. The second generation often causes more significant damage. There are two color forms of the caterpillar: one that is yellowish white with a black head and one that is brown with a red head. **Control:** If possible, prune out webbed terminals. Bt, horticultural oil or insecticidal soap can be used for early instars. There are many predators and parasites that help keep this pest below damaging levels.



Fall webworms feed within webbed branch tips
Photo: Mark Schlossberg, ProLawn Plus, Inc.

Sawflies on Creeping Jenny

Christopher Jordan, SLS Landscaping Inc., found sawfly larvae feeding on creeping jenny (*Lysimachia nummularia*) in Great Falls, VA on June 12. This sawfly also feeds on *Lysimachia vulgaris*. These species are considered invasive in many locations, especially when growing in moist areas. Heavy sawfly infestations can cause significant defoliation.

Control: Conserve can be used for control. Remember, sawflies are related to bees and wasps, not moths and butterflies, so Bt will not work as a control option.



Sawflies are feeding on creeping jenny this week in Virginia
Photo: Christopher Jordan, SLS Landscaping, Inc.

Fruit Insect Management

By: Stanton Gill

If you are managing fruit trees for your customers' apples, pears and peaches, watch out this week. Oriental fruit moth, which attacks apples and pears, is laying eggs now. Delegate Insecticide (Spinosad) or Altacor (same chemical as Acelepyrn) works on this pest. I usually add a spreader sticker such as Nu_film-P. Altacor will also work on rosy apple aphid which is still active on apple trees. On peaches, the second generation of the oriental fruit moth is starting in the next week. The same materials I mentioned for oriental fruit moth work on oriental fruit moth. If not controlled, this moth will lay eggs directly on the young peaches. As the larvae drills into the flesh the infested peach will exude sap. This damage will be seen at the end of June to early July.

White-marked Tussock Moth Caterpillar

Steven Nagy, The Care of Trees, found a white-marked tussock moth caterpillar on pin oak this week. This caterpillar is one that has a wide woody plant host range. There are multiple generations throughout the summer. The caterpillar may cause an allergic reaction. It overwinters in the egg stage.

Control: Usually not necessary.



White-marked tussock moth caterpillars are active throughout the summer
Photo: Steven Nagy, The Care of Trees

Lecanium Scale

Heather Zindash, Mainscapes, Inc., found crawlers of lecanium scale in Frederick on June 15. This scale has many predators and parasites so it is best to use an IGR (Insect Growth Regulator) for control. Crawlers emerge for a period of about 2 - 3 weeks.



Lecanium scale crawlers are finishing up activity this month
Photo: Heather Zindash, Mainscapes, Inc.

Lady Bird Beetles

Lady bird beetles are one of the predators active in the landscape this week. Olivia Leseman, Savatree, found a larva in Great Falls, VA on June 11. Heather Zindash, Mainscapes, Inc., found a larva that had just eaten a hawthorn lace bug. Both adults and larvae of lady bird beetles are predaceous.



This lady bird beetle larva has just finished feeding on a lace bug
Photo: Heather Zindash, Mainscapes, Inc.

New Company Involved with the Green Industry Moves to Maryland

By: Stanton Gill

Biogas. It's a large Italian-based anaerobic digestion company that takes organic waste and converts it into methane and fertilizer. It is opening its first US facility in Jessup, MD. This 5-acre facility will take in 100,000 tons of food waste annually and make a renewable natural gas that can be used for heat or electricity, and an organic fertilizer that can be made into compost or concentrated (dried) into fertilizer.

Beneficial of the Week

By: Paula Shrewsbury, UMD

Even predatory beetles need defenses against their predators

If you spend some time at night looking at plants and the bugs moving around on them you are likely to come across a click beetle. Click beetles are in the Elateridae family and there are over 9,000 species worldwide, and almost 1,000 of those species occur in North America. Other common names are elaters, snapping beetles, spring beetles, and skipjacks. These names come from an unusual and sometimes startling defensive behaviour these beetles have when threatened by predators. Click beetle adults have tough bodies (hard exoskeletons) and a “clicking mechanism”. Click beetles have an amazing “spine” on the underside of their body (the prosternum which is the first section of the thorax) that snaps or fits into a matching “notch” on the mesosternum (the second section of the thorax on the underside). When the [beetle snaps](#) these two sections it makes a loud clicking noise and sends the beetle up to several inches into the air. Almost like a self-catapulting mechanism. This behavior can be quite startling if you do not expect it. This mechanism is usually used as a defense when the beetle is threatened, but it also helps the beetle right itself if for some reason it ends up on its back. If it does not land right side up, be ready for this jumping act to happen again. Some of the most beautiful click beetles are the eyed click beetles or eyed elaters (see image). These beetles are named so because of the false eye spots on the top of their bodies on the pronotum, which is the section just behind the head. These large “eyes” likely make the beetle appear larger and more intimidating to potential predators. False eye spots are another defensive mechanism these beetles have evolved.

Click beetle adults are elongate in shape and usually less than 2 centimeters in length. Most have dull colors and patterns. Most adults are nocturnal (often seen at lights near buildings) and are plant feeders, although they seldom cause damage to plants. Some species, however, are predacious as adults and feed on aphids and other soft bodied insects. The adults and larvae of some species are luminescent. The larvae of click beetles are called wireworms and are found in soil. The larvae are slender, elongate (~1-1.5”), and have somewhat hard exoskeletons and 3 pairs of legs on their thorax. Many species are saprophytes feeding on dead insects and organisms in the soil, while other species of wireworms are serious agricultural pests of potatoes and strawberries. There are



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A click beetle adult demonstrating the typical shape of these beetles

Photo: J. Berger; Bugwood.org



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Click beetle larvae are also known as a wireworms and are active in the soil

Photo: D. Cappaert, MSU; Bugwood.org



Eyed click beetles or eyed elaters are named so because of the false eye spots. These “eyes” likely make the beetle appear larger and more intimidating to potential predators.

Photo: P. Shrewsbury, UMD

however, click beetle species such as the eyed elater where the larvae are predacious and actively hunt in the soil for insects, insect eggs, and small invertebrates to consume.

When you see a click beetle, pick it up and examine it closely. But be ready for it to “click” and jump suddenly in its attempt to scare off a potential threat.

Weed of the Week

By: Chuck Schuster, UME

With summer warmth finally being felt, the weeds as well as the turf and landscapes, are taking off and growing. During a recent landscape visit, I came across this fine plant. Ladysthumb, *Polygonum persicaria*, is a summer annual that can be found in many landscapes and nursery settings throughout the United States. It prefers wetter locations, so naturally this year it is thriving, growing to two feet in height. It can spread laterally in many settings. Leaves are alternately arranged on the stem, lanceolate to elliptical in basic outline, up to six inches in length and one and one quarter inch in width. The leaves taper to a short petiole with an ocrea which will go around the stem. Leaves have a purple spot in the middle of the leaves in the shape of a lady’s thumb, explaining how this weed was named. Roots are fibrous with a shallow taproot (photo 1). Flowers can be very light pink (photo 2) to white in color and are found at the end of a terminal spike on the ends of stems. The fruit is a black achene. The stems are reddish in color with enlargements at the nodes. The thin sheath (ocrea) that surrounds the stem at each leaf petiole has stiff hairs projecting from the top and these will be less than three thirty-seconds of an inch long. While similar to Pennsylvania smartweed, ladysthumb has hairs on the ocrea that Pennsylvania smartweed does not have. While this plant is a desired herb by some, it is a problem for others in the landscape and nursery industry.

Cultural control plant can be achieved in some settings by monitoring irrigation and redirecting water such as with splash blocks. Early in the season it pulls out very easily. Being a summer annual, if caught early, organic products that contain citric acid and clove oil (Burnout) as well as some with ammoniated soaps of fatty acid (Pulverize) can work very well. Control of this weed can be achieved in landscape settings using pre emergence materials including oryzalin (Surflan), isoxaben with trifluralin (Snapshot), and isoxaben (Gallery). Remember that it is a summer annual, so timing of application is important. In turf settings, post emergence products for broadleaf plantss containing 2,4D products will control it. In nursery settings in the row, post emergence use of glyphosate can be used, but continue to remember care needs to be used to prevent sucker contact and or trunk contact. Pre emergence products are less potentially damaging to the desired species.



Photo 1 (left) shows the fibrous root system that has a shallow taproot; Photo 2 (above) shows the pink flowers

Photos: Chuck Schuster, UME

Plant of the Week

By: Ginny Rosenkranz, University of Maryland Extension

Diospyros virginiana, American persimmon, is mostly a dioecious tree, or one that has female flowers on one tree and male flowers on another, but sometimes a tree will have perfect flowers. The fragrant flowers are white to light greenish yellow and shaped a bit like a light bulb or a blue berry flower. The end of the flowers is smaller and has 4 lobes. Male flowers are grouped in clusters while the female flowers are usually solitary. Persimmons usually bloom late May into June, with the male flowers hanging on longer and the female flowers maturing into fruit. The leaves of American persimmon are shiny dark green above and paler on their underside, and are arranged in an alternate fashion on the stems. In the autumn, the leaves turn yellowish green to reddish purple. The fruit is shaped a bit like a tomato and is considered an edible berry, yellowish to pale orange in color, about 1 to 1 ½ inches long and attaches to the stems with 4 calyx lobes. The fruit, when green, is impossible to eat and very astringent, but after hard frosts in late September through October the fruit becomes very sweet and can be eaten off the tree. Plants are hardy from USDA zones 4-9 and grow best in well drained soils with average moisture. It is not pH dependent and mature trees can be drought tolerant, growing in very poor soils or found in abandoned fields, along fence rows and roadsides. It grows as a tree 35-60 feet tall and 20-25 feet wide with a slender rounded crown. It grows best in full sun to part shade. Plants are in the ebony family so the wood is very hard and strong, with very close grain, making it sought after for golf clubs, billiard cues and veneer. The bark is formed into squared blocks, gray black in color and very easy to identify in the winter garden or woods. Plants can sucker, so if a natural look is wanted, leave the suckers to mature. If a single tree is needed, trim off the suckers early in the spring. American persimmons could be considered an alternative to ash trees or non-native undesirable trees like tree-of-heaven (*Ailanthus altissima*). The fruit attracts a wide variety of song birds, squirrels, opossums, and deer. Some cultivars include 'Early Golden' with medium sized fruit and 3-8 seeds, 'John Rick', excellent flavored fruit and 2-8 seeds, and 'Killen' which has a good flavor. Pests include a leaf spot disease, and sometimes it is fed upon by fall webworms.



In the fall, American persimmon attracts a variety of birds and wildlife
Photos: Ginny Rosenkranz, UME

Degree Days (As of June 13)

| | | | |
|--|------|--------------------------------|------|
| Aberdeen, MD (KAPG) | 757 | Annapolis Naval Academy (KNAK) | 1113 |
| Baltimore, MD (KBWI) | 1058 | College Park (KCGS) | 1033 |
| Dulles Airport (KIAD) | 1073 | Frederick (KFDK) | 1003 |
| Ft. Belvoir, VA (KDAA) | 1123 | Greater Cumberland Reg (KCBE) | 976 |
| Gaithersburg (KGAI) | 1024 | Martinsburg, WV (KMRB) | 968 |
| Natl Arboretum.Reagan Natl (KDCA) | 1259 | Salisbury/Ocean City (KSBY) | 1090 |
| St. Mary's City (St. Inigoes, MD-KNUI) | 1155 | Westminster (KDMW) | 1069 |

Important Note: We are now using the [Weather Underground](#) site for degree days. It changes some of the locations available.

1. Enter your zip code (not all locations are included, check nearest weather station to your site) and hit enter
2. Click the "custom" tab/button below the date
3. Enter the start date below the word "from" (ex. Jan. 1) and the end date below the word "to" (current date)
4. Hit the get "history" button
5. Read your growing degree days (base 50) in the 'Sum' column (=Cumulative DD to date for the year)

CONFERENCES

MNLGA Nursery Field Day

June 27, 2018

Locations: Chesapeake Nurseries, Inc. and Marshalls'
Riverbank Nurseries Inc., Quantico, MD

[For more info](#)

Conference information is posted at:
<http://extension.umd.edu/ipm/conferences>

2018 MDA Pesticide Recycling Program

The Maryland Department of Agriculture is offering the empty plastic pesticide container recycling program in 2018. You can view the locations and requirements in the [online brochure](#).

Montgomery County is a new location this year and will also accept clean containers from Prince George's County as well as D.C., as they do not have a collection.

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