

Commercial Horticulture

July 20, 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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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 Joe Roberts (Plant Pathologist for Turf)

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

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

Fertility Management: Andrew Ristvey (Extension Specialist, Wye Research & Education Center)

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Summer Leaf Drop

By: Karen Rane

After a stretch of dry, 90+ °F weather, you may see yellowing foliage and leaf drop on certain tree species, such as tulip tree and river birch. Although this situation can be quite noticeable, these symptoms usually have no long-term impact on tree health.

Fallen tulip tree leaves in July
Photo: Karen Rane



Close-up of yellowing tulip poplar leaves on branch
Photo: Karen Rane

The Weather Never Makes Everyone Happy

By: Stanton Gill

Well, for two months we had ridiculous amounts of rain, and now we are in a dry period. Many nursery owners and landscapers are hoping for rain again - just not so much as the last bout. The hot, dry weather is resulting in many plants with compromised roots showing leaf scorch and dieback as we move into the middle half of summer. Not much we can do now, other than explain to people that a lot of the dieback is tied into the excessive moisture back in April through June.

Tuliptree Scale

By: Stanton Gill

With so many people putting in native plants such as tulip tree we are seeing an increase in the cases of tuliptree scale. This scale is also becoming fairly common on deciduous magnolia trees. In July, the female scales are bulking up on plant juices. They are also excreting excessive amounts of honeydew which is dripping on sidewalks, patios and driveways.

Control: Fortunately, several systemic insecticides can be applied as basal soil drenches or foliar sprays to control this scale. These materials can be applied during the summer. If you plan to use Talus or Distance, then wait until the crawler periods this fall (usually September).



As females feed, they produce a lot of honeydew on which sooty mold grows
Photo: Jake Murphey



The arrow points to the white, waxy ladybird beetle larva that feeds on tuliptree scale. Exit holes of parasitoids are present in the immature stages toward the top of the photo.
Photo: Marie Rojas, IPM Scout

Flatheaded Appletree Borer

Marie Rojas, IPM Scout, is finding flatheaded appletree borers infesting young oaks (*Quercus rubra*, *Q. coccinea*, and *Q. palustris* planted in 2013 and 2015). This borer is an opportunist that attacks weakened trees. Larvae feed beneath the bark and can cause significant damage.

Control: Keep trees healthy and vigorous to reduce problems with this borer. Use trickle irrigation on susceptible trees, especially red maple, dogwood and oaks during the hot part of the summer. A mulch layer will help conserve moisture. It is too late in the year for effective chemical control with permethrin or bifenthrin. Next year, you can apply these materials before adults are active to prevent entry of newly hatching larvae. Usually, adults are out in early June, but this year, the cool, wet spring delayed activity.

If there is oozing on the trunk, check for flatheaded appletree borer larvae under the bark
Photo: Marie Rojas, IPM Scout



Hemlock Elongate Scale

By: Stanton Gill

Heather Zindash, Mainscapes, Inc., found hemlock elongate scale this week. Hemlocks were very common in the landscape before the advent of the hemlock woolly adelgid which decimated hemlocks in the landscape and woods. When hemlocks were common in the landscape, one of the scales we had regularly sent into our lab was hemlock elongate scale. This armored scale feeds on foliage of the hemlock with multiple overlapping generations each year.



Hemlock elongate scale has multiple overlapping generations per year
Photo: Heather Zindash, Mainscapes, Inc.

Years ago, we tested different materials for control of this leaf feeding scale and found dinotefuran was very effective. You do have the option of using Talus or Distance IGRs, but it may take a couple of applications to obtain great control. We have not had a chance to test out some of the newer systemic insecticides such as Acelepyrn, Mainspring, or Altus, for this armored scale.

Lace Bugs

Marie Rojas, IPM Scout, is finding very high lace bug populations on *Tilia* 'Sterling Silver' and *Quercus bicolor*. Marie found a lacewing feeding on them on oaks. Lace bugs cause white stippling on the upper side of the foliage and leave black fecal spots on the undersides. There are several generations a year.

Control: Plants should be monitored regularly for signs of a lace bug infestation. Generally, infestations on deciduous trees do not require treatment. However, if damage is heavy and lace bugs are actively feeding, treatment may be necessary. Get good coverage of horticultural oil on the underside of foliage to reduce populations. Systemic insecticides will give control. Many products are labeled for lace bugs.



Look for predators, like this lacewing larva, among populations of lace bugs
Photo: Marie Rojas, IPM Scout

Orange-striped Oakworms

Marie Rojas, IPM Scout, found orange-striped oakworms feeding gregariously on *Quercus bicolor* this week. Activity from these caterpillars will continue throughout the summer. Red oak is a common host for this native caterpillar, but it can also be found feeding on chestnut, other oak species, birch, hazel, hickory and maple. Larvae feed in clusters and initially skeletonize leaves. Larger caterpillars are defoliators and only leave behind the leaf mid-rib. The caterpillars will feed en masse and completely defoliate whole branches. Control is best when caterpillars are in the early instars stage. Look for caterpillars Bt and Spinosad works very well. Acelepyrn or Mainspring will also work well.



Orange-striped oakworm activity continues
Photo: Marie Rojas, IPM Scout

Green Stink Bugs

Jake Murphey found early instars of green stink bug nymphs this week. There are some nymphs active here at the research center feeding on perennial hibiscus. Green stink bugs have a wide host plant range. They have piercing and sucking mouthparts which they insert into seeds and fruit to feed. They liquefy the plant's contents that they then suck out with their straw-like mouthpart. A variety of predators and parasitoids feed on them including tachinid flies (*Trichopoda* sp.). Insecticides can be used if populations are causing heavy damage. Usually, they're not in high enough numbers on ornamental plants to warrant control.



Early instar green stink bug nymphs are dispersing to find food

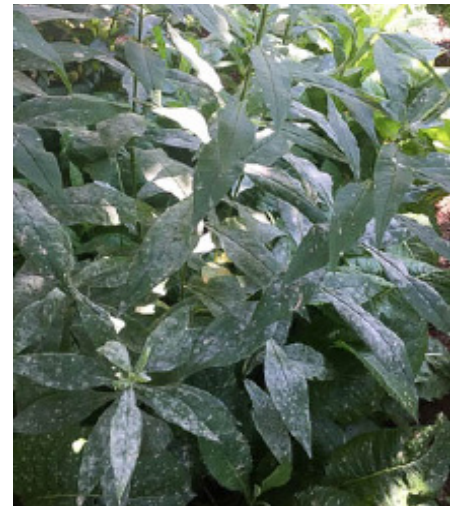
Photo: Jake Murphey



The arrow points to a small white egg of a tachinid fly which is a parasitoid of stink bugs

Powdery Mildew

Connie Bowers, Garden Makeover Company, reported last week that *Phlox paniculata* 'David' was heavily infected with powdery mildew. 'David' is a cultivar that is listed as resistant to powdery mildew. Powdery mildew spores require a small film of water to germinate. High humidity levels early this summer have promoted powdery mildew infection. To help reduce the incidence of this disease, thin and space plants to promote air circulation, avoid overhead irrigation if possible, plant in full sun, and remove infected leaves and stems from the area at the end of season. If infection is severe, fungicides, horticultural oils, and soaps can be used.



Phlox paniculata 'David' is listed as a powdery mildew resistant cultivar, but the disease can still be a problem when environmental conditions are optimal

Photo: Connie Bowers, Garden Makeover Company



This mantid was found feeding on a grasshopper

Photo: Jake Murphey

Beneficial of the Week

By: Paula Shrewsbury, UMD

Rove beetles: Predators that hunt ground dwelling insects

Many pest insects are active their entire life or some stage of their life (ex. eggs, pupae) in the ground. Ground-dwelling predators play a major role in suppressing these plant feeding insects. Rove beetles (family Staphylinidae) are a common predator group in turf, landscape beds, nursery, agricultural and natural environments. Staphylinidae is the largest family of beetles with over 58,000 species worldwide. They are also a very ancient group of beetles with fossils dating back 200 million years ago in the Triassic period. So not surprisingly, rove beetles are very diverse in their ecology and morphology. In addition to being predators, some species feed on fungi, carrion, dung, detritus, and pollen. They have figured out how to survive for a long time! Rove beetles are easily distinguished from other families of beetles by their short elytra (front wings) that result in several of their abdominal segments being exposed. Although they have short front wings, their membranous hind wings are well developed and rove beetles can fly. Species range in size from very tiny (1/16") to quite large (1.5"), are elongate in shape, and their colors range from yellow to red to brown to black. When rove beetles perceive a threat they will lift the tip of the abdomens upward. There is a pair of short appendages on the tip of their abdomen resulting in some people mistaking them for earwigs. Rove beetle larvae also have elongated bodies that appear somewhat flattened from a side view. The larvae have a dark head, and the body is off-white or tan in color and also has projections at the tip of their abdomen. Eggs are laid in moist habitats and where food is present such as in the soil under decaying leaf litter. Rove beetles are nocturnal and most active at night.



A rove beetle adult, *Platydacus fossator*, found in MD foraging for prey. Note the short elytra (front wings) that expose the abdomen

Photo: Susan Ellis, Bugwood.org



Rove beetle adult. Note the characteristic short elytra that expose the beetle's abdomen.

Photo: T. Murray, from bugguide.net

Rove beetles are found in many types of habitats but most species are commonly found foraging at the ground level on the soil surface, under leaf litter and stones, and in mulch. They can also be found under flaking bark of fallen decaying trees, in carrion (dead stuff), and in other moist environments. Some species climb up on plants at night in search of prey. The majority of rove beetle species are predators of insects and mites as adults and larvae. They feed on mites, soil inhabiting nematodes, aphids, beetles, collembola, and fly larvae. However, there are a few that are somewhat specialized or unique in their biology. One genera of rove beetle, *Stenus*, are specialist predators of collembolan (common on plants and in soil feeding on decaying matter and fungus). *Stenus* have a specialized mouthpart, the labium (somewhat analogous to our lower lip), that the beetle can quickly shoot outward from its head using blood pressure. The labium has a pad covered with bristly hairs with hooks and glands that excrete a glue-like substance that results in prey becoming “stuck” to the rove beetles

mouthpart. Yikes! Interestingly, a few species of rove beetles are parasitoids of insects such as fly pupae. Some species use chemicals. For example, one species, *Aleochara curtula*, applies an anti-aphrodisiac pheromone to the female he just mated to deter other males from mating with her (his sperm win!). *Paederus* species emit a toxic chemical (pederin) when threatened which is known to cause blisters to people who handle them.

Rove beetles are diverse and contribute to ecosystem function in many ways, including biological control of plant feeding insects and mites that attack ornamental plants and turf. Rove beetles are reported to suppress populations of pest insects and mites in numerous agricultural, forest, and horticultural systems. There is also a commercially available species of rove beetle, *Dalotia coriaria*, which targets pests such as fungus gnat and shore fly larvae, and thrips.

For more detailed information go to:

http://entnemdept.ufl.edu/creatures/misc/beetles/rove_beetles.htm

Weed of the Week

Chuck Schuster, University of Maryland Extension

Virginia Creeper, *Parthenocissus quinquefolia*, is a native, perennial weed, sometimes used as an ornamental, that has a vining growth habit. It can also become a weed when seed is spread by birds to areas where it is not desired. It can be found throughout the eastern United States in landscapes, fruit crops and in fencerows. Virginia creeper will grow along the ground or on other objects including plants. Palmately compound leaves occur in groups of usually five leaflets, but can vary from three to seven. Leaflets can be up to five inches long, have a toothed margin, and can turn a maroon color in the fall. The root structure is fibrous. Stems can root at nodes when they touch the ground. The flowers are small, pale green to white in color, with a blue-black colored fruit in late spring. The flowers mature to a small purple hard berry that is about one quarter of an inch in diameter. The berries contain an amount of toxic oxalic acid and have been known to cause health issues including death in humans. The berries are not toxic to birds and provide an important winter food source for many bird species. This plant is often confused with poison ivy, but most Virginia creeper plants have five leaves. The plant climbs by way of small disc pads that attach to objects including masonry walls. These pads do not damage brick and block structures and will deteriorate from the surface over time if one severs the plant at the base. This plant may cause slight skin irritation to some.

Control of this weed can be obtained using glyphosate type products applied in the late summer or early fall, and other herbicides labeled for woody perennial weed control. In areas not near desired landscape plantings, good results can be obtained using products that contain 2, 4D products where they can be used safely. When found climbing on desired plant species, do not apply herbicides as a foliar spray to both the climbing vine and the desired plant as they may be absorbed through the bark of the desired plant causing damage. Cut back and pull off the landscape planting. Careful application of a glyphosate product using a small brush can be used on the cut end of the Virginia creeper.



Virginia creeper climbs via small disc pads that attach to structures
Photos: Chuck Schuster, UME

Plant of the Week

By: Ginny Rosenkranz, University of Maryland Extension

Sycamore, *Platanus occidentalis*, is a native tree that can grow 75-100 feet tall and wide. This specimen is quite old, and the owner has measured the diameter at chest height to be 18 feet around, and thinks it is at least 100 feet tall (see bottom photo). There are a number of other common names including buttonwood, buttonball tree and ghost tree, because the bark on the trunk and branches will exfoliate or flake off in large irregular pieces to show off the creamy white inner bark, giving it a ghostly appearance.

They are cold hardy in USDA zones 4-9 and thrive in full sun, but will tolerate light shade, deer and air pollution. They prefer to grow in rich, consistently moist soils and are often found in lowland areas or along streambanks, rivers and flood plains. The leaves are large, medium to dark green in color with 3-5 lobes and coarse marginal teeth. The leaves can expand from 4-10 inches in width. The tiny flowers bloom in April; the male flowers yellow in color and the female flowers red. The female flowers mature into one inch fuzzy balls held on long stalks. These seed balls will stay on the tree throughout the early winter. The fall and winter winds help disperse the seeds. The tree itself usually has a single trunk with a wide spreading open crown. Trees often drop both the bark flakes and leaves during the summer, which along with the twigs and seeds create an untidy appearance on a lawn. Pests include anthracnose, leafspot, powdery mildew, aphids, sycamore plant bug, lace bug, sycamore tussock moth, scale, borer, Japanese beetles, caterpillars, and mites.



Sycamores can show some minor damage from lace bugs when in full sun
Photo: Ginny Rosenkranz, UME



Sycamores prefer rich, moist soils in lowland areas
Photos: Ginny Rosenkranz, UME

Degree Days (As of July 18)

Aberdeen, MD (KAPG)	1692	Annapolis Naval Academy (KNAK)	2189
Baltimore, MD (KBWI)	2033	College Park (KCGS)	1951
Dulles Airport (KIAD)	1994	Frederick (KFDK)	1917
Ft. Belvoir, VA (KDAA)	2086	Greater Cumberland Reg (KCBE)	1840
Gaithersburg (KGAI)	1921	Martinsburg, WV (KMRB)	1850
Natl Arboretum.Reagan Natl (KDCA)	2326	Salisbury/Ocean City (KSBY)	2029
St. Mary's City (St. Inigoes, MD-KNUI)	2134	Westminster (KDMW)	2054

This week, the site for degree days was not functioning as it has been. The steps below might not work at this time. We are checking into the situation. 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)

Clean Water³ - Reduce, Remediate, Recycle Conference

For Growers, Consultants, Advisors, and Educators

Monday, August 6, 2018 (8 AM to 4:15 PM)

Location: University of Maryland, College Park Edward St. Johns Learning and Teaching Center 4131 Campus Drive, College Park, MD 20742

Are you curious about the pros and cons of recycling runoff water from an agricultural operation? Do you want to learn from a National team of experts about how to reduce, remediate and use that return water on your ornamental crops? Then this one-day conference is for you.

Co-sponsored by the Maryland Nursery, Greenhouse and Landscape Association and University of Maryland Extension, this conference will be held in the spectacular Edward St. John's Learning and Teaching Center at the University of Maryland, and includes a catered lunch. The program will provide six Nutrient Management CEU's from the Maryland Department of Agriculture, as well as six Certified Crop Advisor Credits.

MNLGA Members \$30 Non-members \$45 Walk-ins 60\$

Extension Educators – Register by emailing jlc@umd.edu

Register and view the full agenda at <https://tinyurl.com/UM-WATER3>

2018 FALCAN Truck and Trailer Safety Seminar

Wednesday, August 8, 2018

8:00am Registration

8:45am - 2:45pm Seminar (Begins promptly)

Coffee, donuts, and lunch are provided!

Urbana Volunteer Fire Hall, 3602 Urbana Pike, Urbana, MD 21704

Register online at: <https://www.eventbrite.com/e/falcan-truck-trailer-safety-seminar-tickets-47112218915>

Seminar Topics Include:

- Featured speaker Deputy First Class Jason Noblick on “Driver Safety and Safety Rules for the Road”
- Requirements/inspection points for pickups, one-ton and larger trucks and trailers
- Lights, brakes, truck equipment; Fuel carrying requirements
- Permits, licenses, load covers, tie-downs, etc.
- State and Federal laws as they apply to various industries/types of loads
- Scale entry, Driver/Operator requirements
- Accident reporting, Penalty structure
- Outdoor real vehicle and trailer inspection demonstration
- Record keeping requirements: insurance, hours of service, driver and vehicle files

Who Should Attend: Contractors, Drivers, anyone who uses trucks and trailers.

Speakers: All instruction by Maryland State Police and Frederick County Sheriffs Department

Cost: \$75.00/ individual. Limited Seating: Register now! E-mail contact: judy@alpineservices.com

Sponsored by FALCAN and Friends

CONFERENCES

Cut Flower Operation Tour

September 12, 2018

Location: St. Mary's County (Loveville and nearby sites)

Details will be available later in the summer

New Plants for Nursery Growers

October 25, 2018

Location: Country Springs Nursery, Woodbine, MD

Details will be available later in the summer

Advanced IPM PHC Short Course

January 7-10, 2019

Location: University of Maryland, College Park, MD

Contact: Amy Yaich, Admin. Assist. II, 301-405-3911

Email: umdentomology@umd.edu

Information: <https://landscapeipmphc.weebly.com/>

Recertification credits will be posted on the website

Recertification page as awarded by participating states.

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

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