Plant Health Care Report

Scouting Report of The Morton Arboretum

August 23, 2019 **Issue 2019.11**

Comments or concerns regarding PHCR should be sent to syiesla@mortonarb.org.

Our report includes up-to-date disease and insect pest reports for northeastern Illinois. You'll also find a table of accumulated growing degree days (GDD) throughout Illinois, precipitation, and plant phenology indicators to help predict pest emergence. Arboretum staff and volunteers will be scouting for insects and diseases throughout the season. We will also be including information about other pest and disease problems based on samples brought into The Arboretum's Plant Clinic.

We are continuing to use last year's format: full issues alternating with growing degree day (GDD) issues; focus on more serious pests; minor pests covered in shorter articles; alerts issued for new major pests. Readers who receive our email blasts that announce the newsletter is posted online will continue to receive them this year. To be added, please contact me at syiesla@mortonarb.org

This is the last issue. The 2019 index will be published next week.

Quick View

What indicator plant is in bloom at the Arboretum?
Seven Sons Flower (*Heptacodium miconioides*) is in early flower (fig 1)

Accumulated Growing Degree Days (Base 50): 2140.5 (as of August 22)
Accumulated Growing Degree Days (Base 30): 5157.5 (as of August 22)

Insects/other pests

- **Viburnum leaf beetle update**
- **Home invaders**
- **Brown marmorated stink bug**
- **Galls, really cool ones**

Diseases

- **Rust on lawns**

Miscellaneous

- **Watering into autumn**
- **Seasonal needle drop**

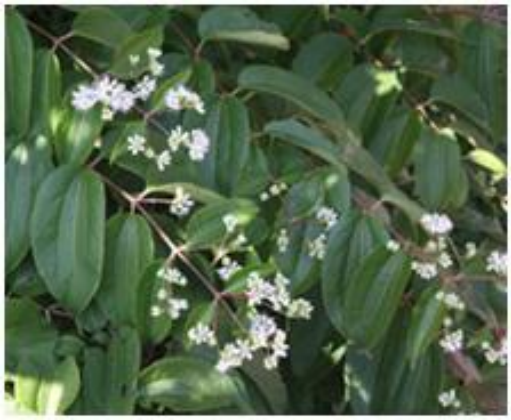

Figure 1 Seven sons flower

Degree Days and Weather Information

We are once again offering Lisle readings right above the Arboretum readings. The spread between these two sites shows that temperatures can vary over a short distance, which means growing degree days can be quite variable as well. To show that this happens elsewhere, we are comparing the GDD in Glencoe to those at the Botanic Garden (which is in Glencoe) and showing the differences at two locations in Waukegan.

As of August 22, we have 2140.5 base-50 growing degree days (GDD). The historical average (1937-2018) for this date is 2218 GDD_{50}. Since January 1, we have had 36.86 inches of precipitation. Historical average (1937-2018) for precipitation Jan-Aug is 29.32".

Location	B_{50} Growing Degree Days Through Aug 23, 2019	Precipitation (in) Aug 16-22, 2019
Carbondale, IL*	3115	
Champaign, IL*	2660	
Chicago Botanic Garden**	No report	
Glencoe*	1687	
Chicago O'Hare*	2315	
Kankakee, IL*	2390	
Lisle, IL*	2366	
The Morton Arboretum	2140.5	2.58"
Quincy, IL*	2761	
Rockford, IL*	2157	
Springfield, IL*	2735	
Waukegan, IL* (60087)	1966	
Waukegan, IL* (60085)	2071	

**Thank you to Chris Henning, Chicago Botanic Garden, for supplying us with this information.

*We obtain most of our degree day information from the GDD Tracker from Michigan State University web site. For additional locations and daily degree days, go to http://www.gddtracker.net/

How serious is it?

This year, articles will continue to be marked to indicate the severity of the problem. Problems that can definitely compromise the health of the plant will be marked "serious". Problems that have the potential to be serious and which may warrant chemical control measures will be marked "potentially serious". Problems that are seldom serious enough for pesticide treatment will be marked "minor". Articles that discuss a problem that is seen now, but would be treated with a pesticide at a later date will be marked "treat later". Since we will cover weeds from time to time, we'll make some categories for them as well. "Aggressive" will be used for weeds that spread quickly and become a problem and "dangerous" for weeds that might pose a risk to humans.

Pest Updates: Insects

Viburnum leaf beetle update (serious)

Viburnum leaf beetle egg-laying sites are beginning to pop up on viburnums everywhere. These eggs will hatch into larvae next spring. Viburnum leaf beetles lay their eggs in the tips of viburnum twigs (usually on the underside of the twig). If we clip those twigs off in fall and winter and destroy them, we can minimize populations for next spring. The egg-laying damage usually occurs in rows (fig. 2). The eggs are laid in holes chewed by the adult. The holes are then covered by a cap of chewed bark. These caps are fairly easy to see as they are a different color than the stem, but they will be SMALL since they are out at the very tips of the stems.

Figure 2 Egg-laying sites on twig tip

While the thought of cutting out egg-infested twigs may not be appealing, getting rid of an insect at the egg stage can be very effective. Food for thought: the fewer that hatch, the fewer we have to try to kill next spring and the less damage we will see on our viburnums. You might say "But I have 20 arrowwood viburnums on my property!" More food for thought: we should probably stop planting 20 of anything. With all the pests on the horizon it pays to diversify as we install new plants. Even with a number of shrubs we can still reduce the population for next season. The eggs are there now. That gives us the next 7 months to find and destroy those twigs.

Home invaders (minor)

This is our last full issue for the season, so let's take a moment to look at some problems that might arise in fall. When the weather turns cold, some pests will become home invaders. Boxelder bugs (*Boisea trivittata*) are usually the number one complaint for home invaders. The Plant Clinic has not yet received any reports of this nuisance pest, but it is almost certain to show up as the weather cools down. These insects feed on sap of seeds, flowers, and leaves of boxelders (*Acer negundo*). Their feeding causes little damage to the tree. They are considered to be a nuisance when large numbers of them appear in homes, especially in fall and spring. Nymphs are bright red when they first hatch,

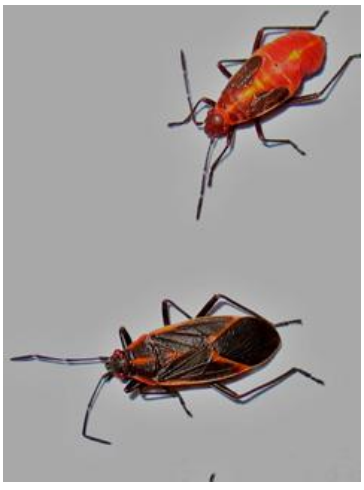

Figure 3 Boxelder bug nymph (above) and adult (below)

developing black wing pads over time. Adults are about ½ inch long, have three red or orange lines in back of their heads, and have black wings with red lines, and a red abdomen (fig. 3). Boxelder bugs overwinter as adults in protected sites. Since they consider your house to be a protected site, if you have cracks in your foundation or around your windows, they will enter your house through those cracks in fall. They do no harm in the house but are very annoying.

While boxelder bugs show up like clockwork every year, some home invaders are occasional guests. These include the multi-colored Asian lady beetle, the leaf-footed beetle and squash bugs. The multi-colored Asian lady beetles are beneficial insects that eat pests like aphids. In fall, they can become an annoyance when they enter the home, sometimes in large numbers. They are not only annoying, they can bite! They can be yellow, red or orange in color and may have no spots or as many as 19. The front of the body is cream-colored with a black 'M' (perhaps a monogram for 'multi-colored'?). Go to http://bugguide.net/index.php?q=search&keys=Harmonia&search=Search for photos.

Leaf-footed bugs and squash bugs often enter homes one at a time and so are easy to manage. Go to http://bugguide.net/node/view/16073/bgimage and http://bugguide.net/index.php?q=search&keys=squash+bug&search=Search

Management: Do not use insecticides inside the home. Caulk around doors and windows to minimize entry by the insects. Keep screens in good repair. Insects that do enter the home can be removed with a vacuum or manually. Do not crush boxelder bugs or ladybugs as they can leave a stain. The leaf-footed bug is related to stink bugs and will make a stink when handled. Squash bugs can make a stink and a stain when crushed. If boxelder bugs are accumulating on the outside of the house, they can be doused with soapy water.

Good website: http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-pests/boxelder-bugs

Brown marmorated stink bug (minor indoors, potentially serious outdoors)

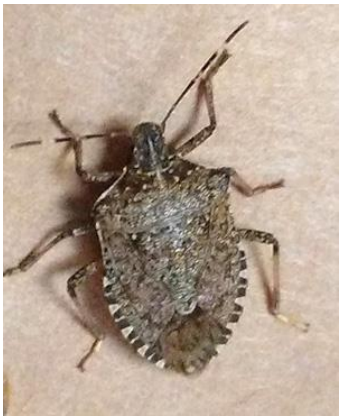

Figure 4 Brown marmorated stink bug

Speaking of home invaders: brown marmorated stink bugs (BMSB) are showing up more often now in the Chicago area. These insects overwinter in houses and become active again in spring. BMSB will feed on a variety of hosts including many fruit, vegetable and field crops, reducing yield on those crops. They have become a serious pest on crops in some states. There are other insects that resemble the BMSB, so check the websites listed below to see more pictures of this insect. The insect is similar in shape to other stink bugs (a somewhat 'shield-shaped' body), but the edge of the body has alternating black and white bands (fig. 4). The antennae will have light-colored bands on them.

Overall, the body has a mottled appearance. When the weather cools off, adults will look to overwinter in homes, much like boxelder bugs.

Management: Managing this pest in the home is similar to managing boxelder bugs in the home. Caulk cracks, and keep screens in good repair. Physically remove the insects in the home with a vacuum cleaner. These are stink bugs, and they do create a stink when threatened so removal by hand could be tricky. After removal by vacuum, the vacuum cleaner may have a smell for a while. They can be knocked into a bucket or soapy water and left to drown.

Good websites with photos for identification:
http://njaes.rutgers.edu/stinkbug/identify.asp
http://www.stopbmsb.org/stink-bug-basics/look-alike-insects/

Galls, really cool ones (minor)

We have seen a lot of galls this summer, and most of them are the ones we see year after year. This year, one of my favorites has shown up at the Plant Clinic. It is the oak lobed gall (sometimes called the pine cone oak gall). It shows up on oaks and looks a bit like a pine cone. It is often 2 to 3 inches across and goes through some interesting color changes (pinks, reds and browns). This gall is caused by a wasp, *Andricus quercusstrobilanus* (a cool name for a cool gall.) The gall is composed of several wedge-shaped sections.

Figure 5 oak lobed gall

Some other galls showing up now are regulars, but still have a certain cool factor. We have two galls, both showing up on goldenrod. They are the goldenrod fly gall and the goldenrod bunch gall. The goldenrod fly gall (*Eurosta soildaginis*) shows up as those interesting ball shapes in the goldenrod stem. The gall maker lives inside that round gall and will pupate there in spring. The goldenrod bunch gall is caused by a midge (*Rhopalomyia solidaginis*). The larva of this midge secretes a chemical that stops the goldenrod stem from growing any taller. The leaves keep forming, though. This leads to a bunch of shortened leaves at the end of the stem (fig. 6). Actually, very pretty!

Figure 6 Goldenrod bunch gall

Pest Updates: Diseases

Rust on lawns (minor)

Figure 7 Rust spores on bluegrass

Orange spores are coming to a shoe near you, courtesy of rust on the lawn. This disease generally shows up in July and August when the grass slows its growth due to heat and dryness. The slow growth of the turf allows the disease to attack the grass. Lawn rust is caused by a *Puccinia* sp. All turfgrasses can be infected by many different species of rust fungi, and Kentucky bluegrass is one of the more rust-susceptible grass species.

Initial symptoms of rust disease include yellow lesions on grass blades that enlarge over time and rupture to release orange spores (fig. 7). When you walk across the lawn, your shoes pick up the orange spores and turn orange (fig. 8). The spores are wind-blown and splashed by rain to new infection sites on grass.

Figure 8 Rust spores on shoes

Management: There is no permanent shoe damage, and the orange spores can be easily wiped off. Lawn rust is usually not severe enough to warrant use of fungicides, and sound management practices will keep this disease in check. Management practices that spur a little growth will minimize rust. These practices include watering and fertilizing with nitrogen. While these practices may apply to a highly managed lawn, they may not be great for the average home lawn. Watering the lawn in summer is not really a priority since the lawn can go dormant and come back when the rain and cooler temperatures return. Fertilizer may be harmful to an unwatered lawn. When the rain returns and the grass grows again, the rust usually diminishes. Some management techniques that apply to any lawn include mowing at the height recommended for the particular turf species and using rust resistant varieties or blends of turfgrass when starting new lawns. For the most part, lawn rust is a relatively minor disease that we can live with.

Good website: http://ipm.illinois.edu/diseases/series400/rpd412/

Miscellaneous

Watering into autumn

This has been a difficult year for watering. In spring we had an over-abundance of rain. Then the tap turned off completely for many of us. Rain during mid-summer was all over the place, with some areas getting a lot and other areas getting nothing. As autumn comes on and the temperatures cool (we hope), there is often the assumption that the growing season is over and we can put the garden hose away. That really is not the case, even in a 'normal' year.

Should we be watering now? Because the rain has been so inconsistent, we really need to go out and observe the soil in our own yard. If the soil is dry, we should be watering, even if the soils were previously saturated. Watering is all about what the plant needs now.

With autumn, we will start to see plants go dormant and perennials will even start to die back. The root systems of all plants are still quite active, and watering will help to keep them in good health. You can continue to water until the soil freezes. Pay special attention to evergreens. Since they retain their needles year-round, they can continue to lose water through transpiration. Make sure that all evergreens go into winter fully hydrated. If you are planting bulbs like tulips or daffodils, they will also need to be watered. When bulbs are planted, they need to grow a root system in the fall. That can be difficult to do if the soil is too dry.

Other areas that would need special attention are newly seeded or sodded lawns and any newly planted trees, shrubs or perennials. All these plants will need a good supply of water to help them become established. Newly planted trees and shrubs do not need to be watered every day. That is good for puppies, but not for trees. Water as needed. Check the soil to see how dry it is. Remember that on a newly planted tree there will be a limited root ball. Apply the water to the root ball area.

We need to modify our watering practices based on the rainfall we get this autumn. Consider purchasing a rain gauge for your yard so you can accurately determine how much rain you are receiving. Storms can be deceiving. A heavy storm may give the impression that a lot of rain fell, but a rain gauge will let you know how much rain really fell. Ideally for most established plants we want to deliver an inch of water per week. If the rain provides half an inch, we need to provide the other half. Try to do the watering all at once so we get a nice deep watering. Sprinkling a little bit everyday does not give the plant the water it needs, and it promotes fungal diseases (we have had enough of those already this season), not to mention what it does for your water bill.

Seasonal needle drop

Figure 9 Seasonal needle drop

Another phenomenon of fall is heading our way: seasonal needle drop (also known as normal needle drop). In autumn, many evergreens will drop older needles. This is a normal process. Needles on an evergreen live for a limited number of years. At the end of their lives, these needles will turn brown and eventually fall off. On some evergreens, such as white pine or arborvitae, this process can be very dramatic, making the evergreen look like it is dying. To determine if your tree has a disease or is going through normal needle drop, check the location of the browning. Trees going through normal needle drop will have a fairly uniform brown or yellow appearance in the interior of the tree since this is where the oldest needles are located (fig. 9). After a few weeks these needles will fall off, leaving the tree looking normal and healthy. Trees with a disease may have brown needles in various areas of the tree, depending on the disease, but the appearance will not be as uniform as that of needle drop. Diseased needles may eventually fall off, but the tree won't look healthy.

Good website:

http://www.mortonarb.org/trees-plants/tree-and-plant-advice/horticulture-care/seasonal-needle-drop

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The Plant Health Care Report is prepared by Sharon Yiesla, M.S., Plant Knowledge Specialist and edited by Fredric Miller, Ph.D., Research Entomologist at The Morton Arboretum and Professor at Joliet Junior College; Julie Janoski, Plant Clinic Manager, and Carol Belshaw, Arboretum Volunteer. The information presented is believed to be accurate, but the authors provide no guarantee and will not be held liable for consequences of actions taken based on the information.

Thank you to the volunteers who scouted for us this season. The Scouting Volunteers include: Maggie Burnitz, LeeAnn Cosper, Ingrid Giles, Loraine Miranda, Mary Noe and Emma Visee. Your hard work is appreciated. Thanks also to Donna Danielson who shares her scouting findings.

Literature/website recommendations:
Indicator plants are chosen because of work done by Donald A. Orton, published in the book Coincide, The Orton System of Pest and Disease Management (http://www.laborofloveconservatory.com/)

Additional information on growing degree days can be found at:
http://www.ipm.msu.edu/agriculture/christmas_trees/gdd_of_landscape_insects
http://extension.unh.edu/resources/files/Resource000986_Rep2328.pdf

The Commercial Landscape & Turfgrass Pest Management Handbook (CPM), for commercial applicators, and Pest Management for the Home Landscape (HYG) for homeowners from the University of Illinois, are available by calling (800-345-6087).

This report is available as a PDF at The Morton Arboretum website at http://www.mortonarb.org/visit-explore/news-events/arboretum-news?tid=259
For pest and disease questions, please contact the Plant Clinic at (630) 719-2424 between 10:00 and 4:00 Mondays through Saturdays or email plantclinic@mortonarb.org . Inquiries or comments about the PHCR should be directed to Sharon Yiesla at syiesla@mortonarb.org .