Plant Health Care Report

Scouting Report of The Morton Arboretum

August 17, 2018 **Issue 2018.11**

Welcome to the Plant Health Care Report (PHCR). My name is Sharon Yiesla. I am on staff at The Morton Arboretum Plant Clinic, and I will be responsible for compiling the newsletter again this year. 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.

To be added to the email list, please contact me at syiesla@mortonarb.org

This is the last issue of the newsletter for this year.

Quick View

What indicator plant is in bloom at the Arboretum?
Seven Sons flower (*Heptacodium miconioides*) is getting ready to flower GDD). (fig.1)
Accumulated Growing Degree Days (Base 50): 2297.5 (as of Aug 16)
Accumulated Growing Degree Days (Base 30): 5111.5 (as of Aug 16)

Insects/other pests

- **Tussock moth caterpillar**
- **Grubs in the lawn**
- **Home invaders**
- **Brown marmorated stink bug**
- **Viburnum leaf beetle update**

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.

As of Aug 16, we are at 2297.5 base-50 growing degree days (GDD). The historical average (1937-2016) for this date is 2088 GDD_{50}. Since January 1, we have had 28.11 inches of precipitation. Historical average (1937-2016) for precipitation Jan-July is 21.89 inches

Location	B_{50} Growing Degree Days Through Aug 16, 2018
Carbondale, IL*	3091
Champaign, IL*	2709
Chicago Botanic Garden**	2061.5
Chicago O'Hare*	2383
Kankakee, IL*	2475
Lisle, IL*	2420
The Morton Arboretum	2297.5
Northbrook, IL**	2262.5 (8/15)
Quincy, IL*	2960
Rockford, IL*	2218
Springfield, IL*	2858
Waukegan, IL*	2009

**Thank you to Mike Brouillard, Northbrook Park District and 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/other pests

Tussock moth caterpillar (usually minor)

White-marked tussock moth caterpillars (*Orgyia leucostigma*) were found feeding on leaves of sycamore (*Platanus occidentalis*). The caterpillars are quite distinctive. When fully grown, they are about an inch to an inch and a half long and have long, pale yellow hairs, reddish orange heads, and long tufts of hair near the front of their body (fig. 2). It is best to avoid touching them, because some people have allergic reactions to the hairs. The larva found by our scouts is fairly large and probably will pupate soon.

Figure 2 White-marked tussock moth caterpillar

Tussock moth larvae feed on leaves, first skeletonizing them and eventually eating the entire leaf. In late summer, caterpillars form gray, hairy cocoons on twigs and branches. The adult male moth is gray. The female is dirty white and cannot fly because she is wingless. The female often lays her eggs on the cocoon from which she emerged. The moth overwinters as an egg. Other hosts include apple, birch, crabapple, elm, fir, hickory, horsechestnut, linden, maple, oak, pecan, poplar, rose, and walnut.

Management: In most years, damage by tussock moth larvae is mostly an aesthetic problem in landscape. In years with heavy populations there will be more damage. They can cause major problems in forests. The caterpillars can be handpicked (carefully and wearing gloves to avoid allergic reaction). *Bacillus thuringiensis var. kurstaki* (Btk) can be sprayed on young larvae.

Grubs in the lawn (potentially serious)

The Plant Clinic has been receiving some inquiries about grubs in the lawn. So far this season, this does not seem to be a big problem. It is worthwhile to review the problem, however, as it seems like there is always some wrong information floating around out there. White grubs are the larvae of several beetles including Japanese beetles, chafers and June beetles. While eggs of these species will hatch into grubs at various times in late summer, most of the damage begins around late July and early August. The grubs will continue to feed on turf roots until the weather gets cold. Then they will go deeper into the soil to spend the winter. When spring returns, the grubs will come back to the surface, but they are older and tougher and insecticides are less successful.

How do you know if your lawn needs grub control? Grubs eat grass roots, and this will lead to brown areas in the lawn. Unfortunately, other causes can lead to a brown lawn. If your lawn has grubs, you will be able to pull the lawn up like a carpet since the roots are gone. Homeowners who are irrigating the lawn should be watchful. The beetles have to bury their eggs in the soil. They are more likely to do this in soils that are moist and easy to dig. So, those of you who are watering may be more likely to deal with grubs this year.

Is grub control a good idea for everyone? Not necessarily. If your lawn has never had grubs before and you are not irrigating, it would be best to skip the grub control. Usually control is not warranted unless 10-12 grubs are present per square foot.

If you plan to manage grubs with insecticides, know that the timing of application depends on the product selected. There are now many insecticides available to treat grubs, and they have different application times. Traditional insecticides, like trichlorfon and carbaryl, are applied to the lawn when young grubs are active (August and September). Imidacloprid can be applied once in mid-July in areas where adult beetles were numerous. A newer product, chlorantraniliprole, is applied in spring to kill new grubs that hatch out in late July. It will not kill grubs present in spring. (Insecticide information from University of Illinois and Michigan State University). The bottom line is to read the product label carefully to see which ingredient the product contains and when it should be used. Timing is important. Most of these products need to be watered in to be effective. Check the label for this information as well.

We receive a lot of questions about the use of the biological control, milky spore disease. This is a bacterium that is specifically toxic to the grub stage of the Japanese beetle and is applied to the soil. This is a slow method at best in the warmer southern states (may take 3-5 years to build up in soil enough to be effective) and is often not very effective in colder, northern states. Also if you have grubs that come from another type of beetle, it won't work on them at all. Good website: http://www.turf.msu.edu/home-lawn-grub-control-products-2

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, 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.

Figure 3 Boxelder bug nymph (top) and adult

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. A vacuum or hand-held vacuum may be needed to remove them. 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)

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.

Figure 4 brown marmorated stink bug adult

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.

Good websites with photos for identification:
http://njaes.rutgers.edu/stinkbug/identify.asp
http://www.stopbmsb.org/stink-bug-basics/look-alike-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) (fig.5). 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. 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.

Figure 5 Viburnum leaf beetle egg laying sites

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.

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

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. 6). 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.

Figure 6 Seasonal needle drop

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 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...I would like to thank the volunteers who will be scouting for us this season. They find most of the insects and diseases reported here. The Scouting Volunteers include: Maggie Burnitz, LeeAnn Cosper, Ingrid Giles, Pat Miller, Loraine Miranda, and Mary Noe . 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, which is published in the book Coincide, The Orton System of Pest and Disease Management. This book may be purchased through the publisher at: http://www.laboroflove conservatory.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 .