

Plant Health Care Report

Scouting Report of The Morton Arboretum



July 15, 2016

Issue 2016.8

Send comments regarding the Plant Health Care Report to Sharon Yiesla at 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 issues; focus on more serious pests; minor pests covered in shorter articles; alerts issued for new major pests. Readers who received our email blasts in the past will continue to receive one weekly, either to announce that the newsletter is available or, on alternate weeks, when the growing degree day information is available. To be added to the email list, please contact me at syiesla@mortonarb.org

Quick View

What indicator plant is in bloom at the Arboretum?

Panicked hydrangea (*Hydrangea paniculata*) is in bloom (fig. 1)

Accumulated Growing Degree Days (Base 50): 1366.5 (as of July 14)

Accumulated Growing Degree Days (Base 30): 3822 (as of July 14)

Insects

- Viburnum leaf beetle
- Bagworm
- Galls, episode 4

Diseases

- Rust on lawns
- Tarspot of maple
- *Guignardia* on buckeye
- Hackberry island chlorosis

Weeds

- Wild parsnip



Figure 1 Panicked hydrangea (photo: John Hagstrom)

Degree Days and Weather Information

We are adding a new location, Lisle, on the GDD list this year. Although we have our own weather station here at the Arboretum, we have noted that the Lisle weather station GDD often differs from our readings. So we are offering Lisle readings right above the Arboretum readings. This just goes to show that temperatures can vary over a short distance, which means growing degree days can be quite variable as well.

As of July 14, we are at 1366.5 base-50 growing degree days (GDD). The historical average (1937-2013) for this date is 1286 GDD₅₀.

Location	B ₅₀ Growing Degree Days Through July 14, 2016	Precipitation (in) July 8-14,2016
Carbondale, IL*	2178	
Champaign, IL*	1804	
Chicago Botanic Garden**	1244 (as of 7/13)	0ö
Chicago O'Hare*	1591	
Kankakee, IL*	1590	
Lisle, IL*	1615	
The Morton Arboretum	1341.5	.5ö
Northbrook, IL**	1329.5	
Quincy, IL*	1980	
Rockford, IL*	1416	
Springfield, IL*	1907	
Waukegan, IL*	1370	

**Thank you to Mike Brouillard, Northbrook Park District and Chris Beiser, 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 (potentially serious)

Last week our scouts found a few viburnum leaf beetle adults feeding on American cranberrybush viburnum (*Viburnum opulus* var. *americanum*). This is the time of year that we would expect to see the adults becoming active. We covered viburnum leaf beetle back in Issue 4, but here is a little recap of the adult stage.

Adults emerge from the soil (early July) and chew on the leaves. Their feeding damage forms irregular round holes in the leaves. The beetles are about ¼ inch long and generally brown in color (fig. 2). On close inspection golden hairs can be seen on the wing covers of the adult beetle. The adult beetles will be mating and laying eggs from summer into fall. There is one generation of the beetle each year. Heavy and repeated defoliation by the viburnum leaf beetle can lead to death of the shrubs.



Figure 2 Viburnum leaf beetle adult (photo: U of I Plant Clinic)

Management: Insecticides can be used on the adults in summer when they are feeding. Some university websites are suggesting these insecticides: spinosad, acephate, carbaryl, cyfluthrin or malathion. From October through April twigs with eggs in them can be pruned out and destroyed.

Good website:

<http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-pests/viburnum-leaf-beetle>

Bagworm (potentially serious)

Bagworms (*Thyridopteryx ephemeraeformis*) have been reported to the Plant Clinic this week. Bagworms overwinter as eggs inside the female bag. The bag can contain between 300 and 1,000 eggs. The eggs hatch in early summer, and the young larvae suspend from a silk string and are often “ballooned” by wind to nearby plants. When a suitable host plant is found, larvae begin to form bags over their bodies. They move to a sturdy branch, attach the bag with a strong band of silk, and then pupate. By mid-August the larvae have matured and are 1 to 1-1/2 inches in length, and their completed bags are 1-1/2 to 2-1/2 inches long. About four weeks later, adults emerge and mate. The sedentary female, which has no eyes, wings,



Figure 3 bagworm

legs, antennae, or functional mouthparts, lays eggs and is then mummified around the egg mass within the bag.

The tiny cone-shaped brownish bags are constructed from silk and camouflaged with bits of twigs and foliage from the host plant (fig. 3). Larvae stick their heads and front legs out of the top of the bags to feed and move (fig. 4). The feeding by young larvae results in holes in the foliage. As the larvae grow, they enlarge their bags and feed on the entire leaf, leaving only veins. Bagworm populations can build rapidly and quickly defoliate their hosts. Healthy deciduous trees can usually tolerate three consecutive years of severe defoliation before they are killed. Evergreen trees, on the other hand, are frequently killed by just one year of severe defoliation. Bagworm larvae feed on over 120 species of trees and shrubs. Their bags are made of the foliage they're feeding on, so a bagworm feeding on pine will have pine needles in its bag, while a bagworm feeding on a crabapple will have pieces of crabapple leaves decorating its bag.



Figure 4 Bagworm caterpillar

Management: Bagworms can be a serious problem. *Bacillus thuringiensis var. kurstaki* (*Btk*) and insecticidal sprays are effective but need to be used on young larvae. It is best to wait until they have stopped ballooning before applying insecticide (at this point we are seeing bags with relatively young larvae inside). Handpicking bags in winter and early spring will also help control populations.

Good websites:

<http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-pests/bagworms>

<http://www.uky.edu/Agriculture/Entomology/entfacts/trees/ef440.htm>

<http://ento.psu.edu/extension/factsheets/bagworm>

Galls, episode 4 (minor)

This week's contestant is a fun one, because at first glance it looks like a fungal leaf spot. Eyespot gall is caused by a midge (a tiny fly-like insect). The gall looks a bit like an eye (fig. 5). The leaf tissue inside the spot turns brown and often falls out like some fungal diseases do. Our sample was on tulip tree (*Liriodendron tulipifera*) and was fairly dull in color. There is another species of midge that does the same thing on maples, but the eyespot is showier because

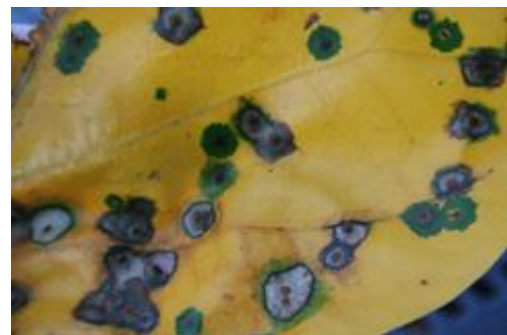


Figure 5 Eyespot gall on tulip tree

it is ringed in red and yellow.

The world of galls is wide and varied. Look at your plants carefully and you may be surprised by what you see. Mike, one of our friends up north, has reported strange growths on sumac. These are not the tiny bubble-like galls we normally see on 'Gro-Low', but are large dark clusters. We have not been able to identify them, but suspect they are galls as well.

Pest Updates: Disease

Rust on lawns (minor)

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.



Figure 6 spores of lawn rust

Initial symptoms of rust disease include yellow lesions on grass blades that enlarge over time and rupture to release orange spores (fig.6). When you walk across the lawn, your shoes pick up the orange spores and turn orange (fig. 7). The spores are wind-blown and splashed by rain to new infection sites on grass.

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.



Figure 7 Rust spores on shoes

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

Tar spot of maple (minor)

Tar spot of maple is showing up early this year (probably due to that rainy spring we had). We have had reports of it on Norway maple (*Acer platanoides*) and Freeman's maple (*Acer x freemanii*). In the early stage, the spots are yellowish with black specks in them and may go unnoticed. As the disease develops, the spots will look just like shiny black spots of tar flung about on the upper surface of maple leaves (fig. 8). We are already seeing this stage. Several different fungi in the genus *Rhytisma* infect the leaves of maples and cause the spots. The spots range from 1/5 to 4/5 inch in diameter. In some cases, a red ring surrounds the spot (fig. 9). *Rhytisma* spp. most commonly infect leaves of silver and Norway maples, although big leaf, red, and sugar maples are also susceptible. It does little harm to the trees, but is unsightly.

Management: Fungicides generally are not necessary. To reduce inoculum, rake up and discard the leaves in fall.

Good website:

<http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-diseases/tar-spot-maple-rhytisma-spp>



Figure 8 Tar spot

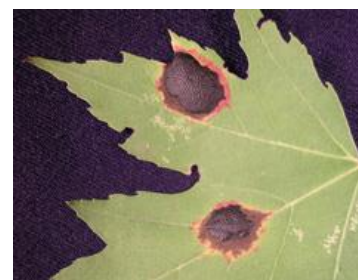


Figure 9 tar spot with red ring

Guignardia on buckeye (minor)

Guignardia leaf blotch (*Guignardia aesculi*) was found on buckeye recently. The disease causes reddish brown to brown lesions with a yellow border that blends into the normal green leaf tissue (fig. 10). The blotches will enlarge, coalesce, and may cover the entire leaf by the end of summer. Premature defoliation may follow on the most susceptible hosts. This disease eventually decreases a tree's ability to photosynthesize, but generally the disease doesn't become severe until the tree's annual growth has slowed or is complete. Therefore it does not do much harm to trees in the landscape, but it does make them unsightly.

Management: Removing fallen leaves may help to destroy the overwintering inoculum. Pruning trees to improve air flow may also help, since the spores are spread and germinate under moist to wet conditions. It is too late for any fungicide treatments.

Good website:

<https://extension.umaine.edu/ipm/ipddl/publications/5094e/>



Figure 10 Guignardia on buckeye

Hackberry island chlorosis (minor)

Usually when we talk about chlorosis we are talking about yellowing of leaves due to nutrient deficiencies. Island chlorosis is thought to be caused by a virus and is showing up on hackberry (*Celtis occidentalis*) at The Morton Arboretum. The symptoms of the viral infection are a mosaic pattern of spots of light green or tan tissue between veins (fig. 11) and some marginal necrosis. The interesting thing about viral infections is that the virus does not want to kill the host, because it needs the host in order to reproduce, but it does make the host weaker and more susceptible to other infections. Since viruses are unable to move on their own, they rely on vectors to move them around. The vectors may be insects, humans, or anything else that can carry the viral particle and create a piercing wound into the host. The only way to prevent a viral disease is to control the vector. Once the tree has a viral disease, it will have it for life. Luckily this one seems to do no real harm to the tree.



Figure 11 Island chlorosis on hackberry

Management: The best way to manage a viral disease is to improve the health and vigor of the host. Running soil and foliar nutrient tests and adding the needed nutrients to the soil, mulching, and watering during dry periods are the best ways to manage.

Pest Updates: Weeds

Wild parsnip (aggressive and dangerous)

You may have seen stories on the local news recently regarding a weed called wild parsnip (*Pastinaca sativa*). This certainly is a plant of concern, because it can spread aggressively and it can impact human health, but it should not cause panic. This weed has actually been proliferating in northern Illinois for several years (I remember seeing it as long as ten years ago.)

The concern over this plant is two-fold. It is an aggressive plant that produces large numbers of seed. It is showing up as large colonies along roadsides and in other out-of-the-way places. I have also seen it in State parks and other native areas (wild parsnip is a non-native plant). There is also a human health concern as contact with the sap of this plant can lead to a



Figure 12 wild parsnip flowers

serious skin reaction. The reaction is called phyto-photo-dermatitis and it occurs when the sap of the plant gets on your skin and then is exposed to sunlight (actually ultra-violet light as this can still happen on a cloudy day.) Symptoms usually show up within 24 to 48 hours and can range from something similar to sunburn to blistering.

Learn to recognize this plant. It is in the carrot family and will have a flower cluster (umbel) similar to that of Queen Anne's lace, but the flowers will be yellow (fig. 12).

Flowering is most prominent in July. Plant size can range from 2 to 5 feet tall and the main stem is visibly grooved (fig. 13). The leaves are pinnately compound and can have 5 to 15 toothed leaflets (fig. 14). Identification of the plant is important if you are planning to remove it. There is a native wildflower known as Golden Alexanders (*Zizia aurea*) that has a similar appearance. Golden Alexanders flowers earlier and is almost done flowering by the time wild parsnip comes into flower. Golden Alexanders also has umbels of yellow flowers and compound leaves, but generally has only 3 to 5 leaflets (fig. 15). It is also a shorter plant at maturity (2 ½ feet).

Management: When removing this weed be sure to wear long pants, long sleeves and gloves to avoid contact with the sap. Small populations can be cut by hand (best done before seeds are set). Larger areas can be mown by machine, but you must be sure that the mower does not discharge the clippings back onto the operator. Mowers should be cleaned afterwards to remove sap. Young, fast-growing plants can be treated with glyphosate.

Good websites:

<http://www.dot.state.mn.us/adopt/documents/wild-parsnips.pdf>

http://www.illinoiswildflowers.info/weeds/plants/wild_parsnip.htm



Figure 13 wild parsnip stem



Figure 14 wild parsnip leaves



Figure 15 leaves of golden Alexanders



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The Plant Health Care Report is prepared by Sharon Yiesla, M.S., Plant Knowledge Specialist and edited by Stephanie Adams, M.S. Research Specialist in Plant Health Care; Fredric Miller, Ph.D., Research Entomologist at The Morton Arboretum and Professor at Joliet Junior College; Doris Taylor, 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...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: LeeAnn Cosper, Anne Finn, Ingrid Giles, Emily Hansen, Ann Klingele, Loraine Miranda, and Bill Sheahan. 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.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 .

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