

Plant Health Care Report

Scouting Report of The Morton Arboretum

July 26, 2019

Issue 2019.9

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

Quick View

What indicator plant is in bloom at the Arboretum?

Queen Anne's lace (*Daucus carota*) is in flower (Figure 1)

Accumulated Growing Degree Days (Base 50): 1512.5 (as of July 25)

Accumulated Growing Degree Days (Base 30): 3969.5 (as of July 25)

Miscellaneous

- Gateway to Tree Science

Insects/other pests

- Magnolia scale
- Fall webworm
- Galls
- Milkweed bugs and beetles

Diseases

- Septoria leaf spot on dogwood
- Tar spot of maple
- Bur oak blight



Figure 1 Queen Anne's lace

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 July 25, we have 1512.5 base-50 growing degree days (GDD). The historical average (1937-2018) for this date is 1578 GDD₅₀. Since January 1, we have had 32.91 inches of precipitation. Historical average (1937-2018) for precipitation Jan-July is 24.67 inches.

Location	B ₅₀ Growing Degree Days Through July 25, 2019	Precipitation (in) July 19-25, 2019
Carbondale, IL*	2331	
Champaign, IL*	1984	
Chicago Botanic Garden**	No report	
Glencoe*	1053	
Chicago O'Hare*	1638	
Kankakee, IL*	1742	
Lisle, IL*	1684	
The Morton Arboretum	1512.5	
Quincy, IL*	2050	
Rockford, IL*	1541	
Springfield, IL*	2040	
Waukegan, IL* (60087)	1342	
Waukegan, IL* (60085)	1429	

**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.

Miscellaneous

Gateway to Tree Science

Have you heard about the new Gateway to Tree Science exhibition at The Morton Arboretum? We want you to experience it and let us know what you think. We would like to invite you to visit the site August 2, 3, or 4 and answer a brief survey. To show our gratitude, we will enter your name to win one of ten \$25 Arboretum gift cards. Please email a.falletta.cowden@gmail.com to RSVP and let us know you are coming! Have you already visited? Fill out the survey here <https://www.surveymonkey.com/r/GatewaySummative> and we will enter your name in the drawing.

Pest Updates: Insects

Magnolia scale (potentially serious)

The Plant Clinic at The Morton Arboretum is getting numerous calls and emails from homeowners with magnolia scale (*Neolecanium cornuparvum*) on their magnolia trees. This is an unusual scale insect because they're so big and easy to see! Magnolia scale has become an ongoing problem in northeastern Illinois. These insects have sucking mouthparts and extract sap from the host plant's branches and twigs. Badly infested branches and twigs are weakened and plant growth is slowed. When infestations are severe, branch dieback can result, and with repeated severe attacks, trees may be killed. As with most soft scale infestations, plant leaves are often covered with sooty mold, a black fungus that grows on the honeydew excreted by the scales (fig. 2). Sooty mold cuts down on photosynthesis because it blocks sunlight from the leaf.

Initially, magnolia scales are shiny, flesh-colored to pinkish brown, and smooth, but they become covered with a white mealy wax over time (fig. 3). This wax is lost at the time crawlers emerge. Adult females give birth to live young, called crawlers, in late August or early September. Some universities report that the beginning of emergence should start around 1900 to 1950 GDD. We are already at 1512.5 The crawlers are tiny, flattened, and vary in color



Figure 2 Honeydew and sooty mold



Figure 3 Adult scale on magnolia branch

from yellow to reddish-brown. The crawlers settle on one- to two-year-old twigs to feed and remain there through the winter.

Management: Before you buy a plant, check it carefully for scale. Beneficial insects, such as lady beetles, are frequently seen gobbling up crawlers. Fall and spring insecticide sprays (such as insecticidal soap and summer oils) to control crawlers are suggested for large populations. Soil drenches of systemic products containing either imidacloprid or dinotefuran can be used in late summer, but will need some time to move through the plant and become effective. It should be noted that adult scale will remain in place even when dead. This often gives the impression that the insecticides did not work. Dead adults will be dry and easy to pick off. Live scale will ooze liquid when crushed.

Good web site: <http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-pests/magnolia-scale-neolecanium-cornuparvum>

Fall webworm (minor)

We are already receiving reports of fall webworm (*Hyphantria cunea*). This caterpillar is known to feed on more than 100 species of deciduous trees. Preferred hosts include hickory, ash, birch, black walnut, crabapple, elm, maple, oak, and pecan. The caterpillars are pale green to yellow, with black spots, and covered with long, silky white hairs (fig. 4). There are two races, black-headed and red-headed. The black-headed webworms are supposed to appear about a month earlier than the red-headed race. Full-grown caterpillars reach about one inch in length.

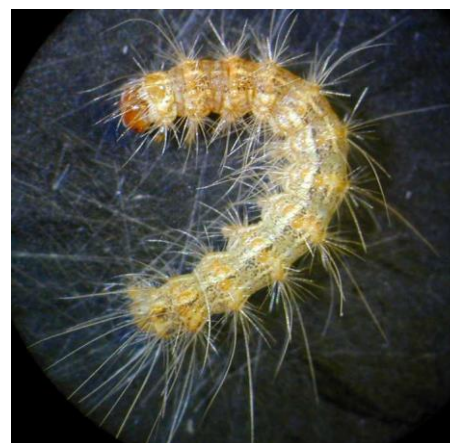


Figure 4 Fall webworm caterpillar

Fall webworms overwinter in the pupal stage in the ground, under loose bark, and in leaf litter. Adult moths appear from late May through August, and females deposit eggs in hair-covered masses on the underside of host leaves. In about one week, eggs hatch into caterpillars that begin to spin a messy web over the foliage on which they feed. The webs increase in size (fig. 5) as caterpillars continue to feed. In about six weeks caterpillars will drop to the ground and pupate. Damage is generally aesthetic since this pest usually eats leaves late in the season, and webs are found in limited areas.



Figure 5 Fall webworm web

Some people confuse fall webworm and eastern tent

caterpillar. How can you tell the difference? Eastern tent caterpillars are spring caterpillars and form thick, neat tents in the angles of branches. Fall webworm caterpillars are active much later in the season and make a messy web at the ends of the branches. Eastern tent caterpillars go outside the tent to feed and return to the tent at night. Fall webworm caterpillars feed in the nest and expand the nest to enclose more leaves to feed on.

Management: Insecticides generally are not warranted. The unsightly webs can be pruned out of small trees. Since these caterpillars stay in the web while feeding, pruning the webs at any time of day will eliminate the caterpillars. Webworms also have many natural enemies including birds, predaceous bugs, and parasitic wasps.

Good website:

<http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-pests/tent-or-web-making-caterpillars>

Galls (minor)

This has been a gall-filled summer, and here are a few of the common ones that we have been seeing. We present these here just so you know what these weird things are. They are very minor and generally don't need to be managed.

As usual, the oaks have a number of galls this year. The hedgehog gall was found on bur oak (*Quercus macrocarpa*). Hedgehog galls are produced by the cynipid wasp *Acraspis erinacei*. They range in size from 1/4 to 1/2 inch in diameter and are a yellow and red color (fig. 6). They are actually attractive little guys!



Figure 6 Hedgehog gall

Jumping oak gall was found on white oak (*Quercus alba*). Jumping oak gall is caused by the gall wasp *Neuroterus saltatorius*. They start out looking like small beads on the back of oak leaves (fig. 7). Later, the galls will pop off and fall to the ground. The activity of the larvae inside will cause the galls to jump around. This is free entertainment from the insect world. A small brown spot remains on the leaf where the gall was once attached. Since no evidence of the gall remains, people assume that the tree has a fungus.



Figure 7 Jumping oak galls

On black maple (*Acer saccharum* subsp. *nigrum*) our scouts discovered the gouty vein gall. This gall is caused by a midge that only attacks sugar maple and black maple. Sometimes if the gall maker moves in early on young leaves, it can cause a very deformed leaf. A later infestation causes only pouch-like growths along the veins (fig. 8).



Figure 8 gouty vein gall

Cypress twig gall is now starting to show up on bald-cypress (*Taxodium distichum*). Cypress twig gall is also caused by a midge (*Taxodiomyia* species). These white, oval galls form along the ends of branchlets (fig. 9). The galls will fall off the tree with the deciduous branchlets in autumn.



Figure 9 Cypress twig gall

Good website: Here is a great website for a picture sheet featuring many common galls:

https://fieldguides.fieldmuseum.org/sites/default/files/rapid-color-guides-pdfs/1170_usa_common_galls_of_the_chicago_region_0.pdf

Milkweed bugs and beetles (minor)

Milkweed has become a popular plant to grow in home gardens as well as native areas. Many are hoping to attract monarch butterflies. Sometimes uninvited guests show up, too. We are starting to see some of these uninvited guests already. Red milkweed beetles (*Tetraopes tetraphthalmus*) are 1/2 to 3/4 inch long and red with black spots and long black antennae (fig. 10). Adults feed on milkweed leaves; while in the larval stage they bore into and feed on milkweed stems and roots. Milkweed bugs also attack milkweed. There are two species of milkweed bug, the large milkweed bug (*Oncopeltus fasciatus*) and the small milkweed bug (*Lygaeus kalmia*). These two insects look very much alike, both sporting bright orange-red and black colors (fig. 11). Young bugs (nymphs) also have these colors, but lack fully developed wings. Both the adults and the nymphs will feed on the milkweed seeds, and it is



Figure 10 milkweed beetle

not uncommon to see groups of them huddled together on the milkweed fruits. These insects are often mistaken for boxelder bugs which are similar in color.

Management: None usually needed as very little damage is done.

Good websites:

<http://bugguide.net/node/view/504>

<http://bugguide.net/node/view/460>



Figure 11 Milkweed bug

Pest Updates: Diseases

***Septoria* leaf spot on dogwood (minor)**

Every year, about this time, *Septoria* leaf spot shows up on dogwood. The spots are present only on leaves. They have purple brown margins with pale centers, are angular, about 1/8 of an inch in diameter, and limited by veins (fig. 12). The spots get larger and more numerous as the growing season progresses, but the disease is actually of little consequence to the plant.

Management: Sanitary measures, such as collecting and discarding infected leaves as soon as they become apparent, should help reduce spread to new leaves and plants



Figure 12 *Septoria* on dogwood

Tar spot of maple (minor)

Tar spot of maple is showing again this year. In the early stage, the spots are yellowish with black specks in them that 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 (we are seeing this stage now) (fig. 13). 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. *Rhytisma* spp. most commonly infect leaves of silver and Norway maples, although red and sugar



Figure 13 Tar spot

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. Raking is only effective if you and your neighbors with maples all rake and discard leaves.

Good website:

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

Bur oak blight (potentially serious)

This disease is caused by the fungal pathogen *Tubakia iowensis*. There are other species of *Tubakia* that cause less serious fungal diseases. BOB infects bur oak (*Quercus macrocarpa*, especially *Q. macrocarpa* variety *oliviformis*), and recent research by Iowa State shows that swamp white oak (*Quercus bicolor*) may be infected, although this is rare.

We have not had any calls about this disease yet, but this is the time to be looking for symptoms. The first symptoms are purplish spots on the veins on the lower side of the leaves. The spots then spread and develop into purple coloration along the veins on both the lower and upper side of the leaves (fig. 14). In August and September, symptoms will worsen, with veins dying and the infection moving to the end of the leaf, leading to a wedge-shaped dead area. While there may be some defoliation, some infected leaves will remain on the leaves, and the fungal spores will overwinter in pustules (fig. 15) located on the petioles of these infected leaves. The presence of these pustules is considered a requirement for the confirmation of BOB. New spores will be released in spring. Repeated years of defoliation may predispose the tree to other problems, such as *Armillaria* root rot and two-lined chestnut borer. Often, these secondary problems contribute to the death of a tree as much as BOB itself.



Figure 14 Discolored veins due to bur oak blight



Figure 15 Black pustules on leafstalk

Management: First, confirm that the tree actually has bur oak blight. Get a sample tested at the University of Illinois Plant Clinic (<http://web.extension.illinois.edu/plantclinic/>). Keep trees vigorous through proper watering and pruning (during dormant season). Iowa State and University of Minnesota are indicating that injections of propiconazole in spring may be useful in slowing the disease. Injections must be done by a licensed professional.

Good websites:

<http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-diseases/bur-oak-blight>

<http://blog-yard-garden-news.extension.umn.edu/2016/08/a-bad-year-for-burr-oak-blight.html>

<http://hyg.ipm.illinois.edu/article.php?id=752>



[Bartlett Tree Experts, Plant Clinic sponsor.](#)

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Thank you to the volunteers who will be scouting for us this season. The Scouting Volunteers include: Maggie Burnitz, LeeAnn Cospers, 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.

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