

Plant Health Care Report



THE
CHAMPION
of TREES

Scouting Report of The Morton Arboretum

June 16, 2017

Issue 2017.6

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 am responsible for compiling the newsletter. Comments or concerns regarding PHCR should be sent to syiesla@mortonarb.org. To be added to the email list, please contact me at that email address.

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.

This newsletter is available online at

<http://www.mortonarb.org/news-publication/plant-healthcare-report?tid=259>

Quick View

What indicator plant is in bloom at the Arboretum?

Panicked hydrangea (*Hydrangea paniculata*) is in very early flower (Figure 1)

Accumulated Growing Degree Days (Base 50): 718.5 (as of June 15)

Accumulated Growing Degree Days (Base 30): 2694.5 (as of June 15)

Insects/other pests

- Viburnum leaf beetle update
- Lecanium scale update
- Hawthorn leafminer
- Lace bugs
- Fletcher scale
- Two-marked treehopper
- Leafhoppers
- Currant spanworm
- Grape flea beetle
- Galls, chapter 2

Diseases

- Downy leaf spot on hickory
- Oak leaf blister
- Black spot on rose
- Septoria on phlox



Figure 1 Panicked hydrangea (photo: John Hagstrom)

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 June 15, we are at 718.5 base-50 growing degree days (GDD). The historical average (1937-2016) for this date is 629 GDD₅₀. Since January 1, we have had 22.18 inches of precipitation. Historical average (1937-2016) for precipitation Jan-June is 18.02 inches.

Location	B ₅₀ Growing Degree Days Through June 15 2017	Precipitation (in) June 9-15, 2017
Carbondale, IL*	1460	
Champaign, IL*	1150	
Chicago Botanic Garden**	644 (as of 6/13)	.05 inches
Chicago O'Hare*	837	
Kankakee, IL*	948	
Lisle, IL*	869	
The Morton Arboretum	718.5	1.24 inches
Northbrook, IL**	682	
Quincy, IL*	1226	
Rockford, IL*	776	
Springfield, IL*	1188	
Waukegan, IL*	645	

**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 update

Until recently, viburnum leaf beetle larvae have been feeding heavily on viburnum leaves. The larvae are now going into the ground to pupate and become adults. While they are in the soil, they can't be treated with insecticides. In early July, the small brown beetles will emerge and again feed on leaves. They can be treated with one of the following insecticides: carbaryl, malathion or acephate. Insecticidal soap that worked on the larvae will not treat the adults. In fall, look for egg laying sites. The actual eggs are not visible. The eggs are laid in small holes on the ends of twigs, and then the holes are capped with a mixture of chewed wood and excrement. The caps are dark and stand out against the bark of the twig, making them easy to see. Cut out the twigs that have the eggs in them and get them out of the garden completely. This will greatly reduce the number of insects you have next year.

Lecanium scale update

We have some reports that the crawler stage of lecanium scale is beginning to emerge. We discussed lecanium scale in [issue 4](#).

Hawthorn leafminer (minor)

Hawthorn leafminers (*Profenusa canadensis*) have been reported locally on hawthorn. The hawthorn leafminer is a native sawfly. The mines usually appear on the end of the leaf instead of all along the midrib as is common with many other leafminers. When the mines are larger, the leaves will almost look blighted. If you perform the leaf miner test by holding the leaves up to the sun, you will find frass and larvae between the upper and lower epidermis (fig. 2).



Figure 2 Hawthorn leafminer damage

Management: The effect of the mines is usually just aesthetic. Since the insect overwinters in the ground, destroying fallen leaves does not help control them.

Good website: <http://www.ipm.iastate.edu/ipm/info/insects/hawthorn-leafminer>

Lace bugs (minor)

The hawthorn lace bug (*Corythucha cydonia*) has been found on cockspur hawthorn (*Crataegus crus-galli*), and the sycamore lace bug has been found on sycamore. Lace bugs are named for the lacy appearance of their thorax and wings (fig. 3), which are quite attractive when viewed with a hand lens or magnifier. Lace bugs have piercing/sucking mouthparts, so the damage

appears as stippling or tiny yellow spots on the leaves. They also tend to produce dark, tar-like spots of excrement on the lower side of the leaf (fig. 4). These are fairly easy to see. Adults overwinter under loose bark and in leaf litter. They become active in spring and begin feeding on new leaves. The females lay eggs along the larger veins on the lower leaf surface. The eggs hatch after a few weeks. Newly hatched nymphs cluster together and feed.

There are many species of lace bugs, most of which are host specific. Hawthorn lace bug, however, can attack several species within the Rose family including cotoneaster, flowering quince, crabapple, mountain ash, and hawthorn.



Figure 3 Hawthorn lace bug adult

Management: There are several naturally occurring predators including green lacewings, mites, and assassin bugs. A forceful spray of water will dislodge newly-hatched nymphs, and they will often die before they find their way back to suitable leaves. Insecticides generally are not necessary except for severe infestations. Avoid using insecticides if natural predators are present.

Good website:

<http://hyg.ipm.illinois.edu/pastpest/200113b.html>



Figure 4 Lace bug excrement

Fletcher scale (minor to potentially serious)

Fletcher scale (*Parthenolecanium fletcheri*) adults have been found on arborvitae (*Thuja*) recently. Yews and arborvitae are common hosts for this pest. The adult scales are reddish brown and about 1/8 of an inch in diameter on the twigs. The crawlers are very tiny and pale yellow. You definitely need a good hand lens to see the crawlers. We did not see any crawlers on the sample that came in last week, but crawlers are expected to be active between mid-June and mid-July (GDD 900-1200). Fletcher scale weakens plants, causing foliage drop, and, because they create honeydew, can cause sooty mold on host plants.



Figure 5 Fletcher scale adult

Management: The crawler stage is the stage that needs to be managed. Since Fletcher scale has a lot of natural enemies, use an insecticide that minimizes death of natural enemies such as insecticidal soap or summer oil.

Two-marked treehopper (minor)

Two-marked treehopper (*Enchenopa binotata*) larvae were found on wafer-ash (*Ptelea trifoliata*) shoots. Adults are dusky brown with two yellow spots on their backs (thus the name), have high, curved horns that point forward coming out of their thorax (fig. 6), and are less than ½ inch long. The nymphs look quite different from the adults. They're about 1/8 inch long, dark gray to brown, and have spines sticking out of their abdomens (fig. 7). Nymphs are very active right now. Both stages can, as you may imagine by their name, jump!



Figure 6 Two-marked treehopper adult

Nymphs and adults suck plant juices, but don't do much damage. The damage appears as pale yellow stippling on the leaves. Treehoppers do, however, produce honeydew which encourages sooty mold. Female adults can injure twigs by laying eggs in slits made in the bark. Black locust, bittersweet, redbud, and viburnum are also hosts for this insect.



Figure 7 Two-marked treehopper nymphs

Management: Control is not necessary.

Good website:

http://www.na.fs.fed.us/spfo/pubs/howtos/ht_walnut/treehop2.htm

Leafhoppers (minor to potentially serious, depending on species and host)

Leafhoppers are starting to show up, doing minor damage. We have seen nymphs on a variety of plants, and now we have seen adults on black walnut (*Juglans nigra*). There are many species of leafhopper on a wide variety of hosts. Leafhoppers have piercing/sucking mouthparts and feed on leaf sap, causing yellow-white stippling and leaf curling. The stippling is similar to spider mite damage but more noticeable (fig. 8). Damage on some plants shows up as stunted shoots and distorted leaves, while on other plants symptoms are limited to the stippling on the leaves.



Figure 8 Leafhopper (arrow) and damage

Leafhoppers attack several host trees, with red maples showing the most damage. Feeding on maples produces stunted tree shoots and leaves with brown edges that curl downward. Sometime feeding leads to scorched-looking margins. This is referred to as 'hopper burn'. Leafhoppers can be vectors of several organisms that cause woody plant diseases including elm yellows, aster yellows, and bacterial scorch diseases. They become a more serious problem when they do vector disease. Controlling the vector helps to control these diseases.

Common species, like the potato leafhopper, do not overwinter in Illinois. They fly in from the south in spring. Eggs hatch in the spring and five nymphal stages are passed through before the adult stage is reached. Adults are generally less than 3 mm long.

Management: Remove and destroy leaf debris in the fall. Keep trees healthy and vigorous by keeping them mulched and watering during drought periods to lower tree stress. In severe infestations, insecticides can be used and should be applied when hoppers are visible on the foliage but before leaves begin to curl.

Good website: <http://www.inhs.uiuc.edu/~dietrich/Leafhome.html>

Currant spanworm (minor)

The currant spanworm (*Speranza ribearia*, formerly *Itame ribearia*) has been found on American black currant (*Ribes americanum*). This lemon yellow, frosty white, black spotted caterpillar is quite beautiful (fig. 9). The currant spanworm is a fairly uncommon pest. When disturbed, the caterpillars drop down from the plant on a strand of silk. The spanworm pupates in the ground, and the moth emerges in late June. The moth is light tan with a row of parallel gray dashes across each wing. The eggs are laid on the bark in July and hatch the following spring.



Figure 9 Currant spanworm

Management: Treatment is seldom needed. In a severe infestation *Bacillus thuringiensis kurstaki* (Btk) can be used.

Good website: <http://www.extension.umn.edu/garden/insects/find/currant-spanworm/>

Grape flea beetle (minor to potentially serious)

Our scouts brought in the larva of this interesting little guy. The thing about it that caught my attention was how much the larva of the grape flea beetle (*Altica chalybea*) looked like the larvae of the viburnum leaf beetle! They are nearly twins. It took me by surprise because the

pest was found on the leaves of summer grape (*Vitis aestivalis*), not on viburnum. An internet search brought me to the real identity of this insect. It pays to take a minute to investigate, rather than jumping to conclusions.

In general, this is not a major pest, but grape growers should be wary of the adult of this beetle. The adult beetle is the overwintering stage. In spring, the metallic blue beetle attacks buds of grape as they begin to swell and hollows them out, doing quite a bit of damage. The beetle will cause damage from bud swell until the shoot is more than ½ inch long. The feeding by the larvae later in the season is considered minor.

Management: This is a sporadic pest in our area, so control is seldom needed. Grape growers should check the link to Cornell University below for management suggestions.

Good websites: <https://ecommons.cornell.edu/handle/1813/43101>
<http://articles.extension.org/pages/31592/grape-flea-beetle-altica-chalybea>

Galls, chapter 2 (minor)

It is turning out to be a busy year for galls. We are featuring a nice selection of them for you this week. We write about these just so you know what you are looking at. Most galls are very minor and we don't need to treat for them.

Our native buttonbush (*Cephalanthus occidentalis*) is showing a weird gall that we have seen in previous years. Buttonbush galls, caused by a mite, are small, bumpy galls (fig. 10). They show up in large numbers, often giving the whole shrub an unattractive look.



Figure 10 Gall on buttonbush

Witch-hazel cone gall is showing up on witch-hazel (thus the name!) Witch-hazel cone gall is caused by an aphid. The gall does indeed look like a pointy little cone emerging from the upper surface of the leaf (fig. 11)

Elms are doubling up and have presented us with two really neat galls, the elm sack gall and cockscomb gall. The elm sack gall sticks up from the upper leaf surface like a little pink pouch. It is caused by an aphid. The cockscomb gall is also caused by an aphid but it produces a very different looking gall. An elongated portion of the leaf puffs up and takes on a corrugated look. Eventually the gall turns reddish and does really look like a cockscomb. (See website below for photos).



Figure 11 Witch-hazel cone gall

Good website: <http://bygl.osu.edu/node/451>

Pest Updates: Diseases

Downy leaf spot on hickory (minor)

Downy leaf spot, also known as white mold or white leaf spot, caused by the fungus *Microstroma juglandis*, has been found on hickory (*Carya* sp.). Powdery, white, fuzzy spots that are more concentrated near the leaf veins are forming on the underside of the leaf surface (fig. 12). Corresponding chlorotic spots appear on the upper leaf surface. These spots vary in size and may coalesce to form large angular lesions. The fungus may also cause witches' brooms near the ends of branches with stunted and yellowish leaves that may drop in early summer.



Figure 12 Downy leaf spot on hickory

Management: Downy leaf spot attacks hickories and walnuts but is not a significant threat to the trees. Witches' brooms can be pruned to improve the appearance of the tree. Chemical management is not recommended.

Good website: <http://plantclinic.cornell.edu/factsheets/downyleafspothckory.pdf>

Oak leaf blister (minor)

Oak leaf blister, caused by the fungus *Taphrina caerulescens*, has been found on bur oak. Leaves develop wrinkled, raised, pale whitish-yellow blisters on their upper surface (fig. 13) and corresponding gray depressions on the lower leaf surface in spring and early summer. Blisters range from 1/10 of an inch to an inch in diameter. As they age and merge, the blisters become thickened and puckered and the leaf may become distorted. Red oak (*Quercus rubra*) is the most susceptible species. Oak leaf blister, like other *Taphrina* diseases, usually develops only during cool, wet springs. Oak leaf blister mostly a cosmetic problem. Infected leaves become distorted and may prematurely drop. The disease usually slows during the summer.



Figure 13 Oak leaf blister

Management: The fungus survives the winter on twigs and bud scales. On oak, leaf blister is more unsightly than harmful, so control is not a high priority.

Good web site: <http://www.ag.uiuc.edu/~vista/abstracts/a663.html>

Black spot on rose (potentially serious)

Black spot on rose is here in a big way. Black spot is caused by the fungus *Diplocarpon rosae*. Round to irregular leaf spots with fringed margins appear on either leaf surface but primarily on the upper surface (fig. 14). When infection is severe (and it seems to be so this year), the entire leaf will turn yellow and drop. Repeated defoliation will lead to reduction in flower quality and quantity, stunting and weakening of the plant, and increased susceptibility to other diseases.



Figure 14 Black spot on rose

The fungus overwinters on fallen leaves and diseased canes. Spores are splashed by water or wind-blown rain from fallen leaves and cane lesions on to newly emerging leaves and succulent stems in the spring. Warm temperatures, combined with wet leaves and high humidity, will result in abundant spore germination and infection in about one day.

Management: Remove infected leaves and canes to reduce inoculum. Plant roses in sunny locations with good air circulation and avoid overhead watering. Avoid planting them too densely. Fungicides should be applied as soon as leaves emerge and continued, at labeled intervals, until leaves drop in the fall. When planting new roses, look for cultivars that are resistant to this disease.

Good web site: <http://www.ag.uiuc.edu/~vista/abstracts/a610.html>

Septoria on phlox (minor)

Septoria on phlox? This is a host plant that we don't usually talk about when we discuss phlox, but phlox can get it, especially when we have a cool, wet spring like we did this year. Our scouts found septoria on *Phlox paniculata* 'Blue Paradise'. The symptoms we see on phlox are similar to those we see when this disease shows up in late summer on dogwood. The leaves develop small, purplish spots.

Management: This is a minor problem and no chemical measures should be needed. Keep leaves dry, space plant out to facilitate air flow and clean up infected plant debris.



Bartlett Tree Experts, Presenting Sponsor of the Plant Clinic.

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; Doris Taylor, Plant Clinic Manager, and Carol Belshaw, Arboretum Volunteer. Frank Balestri M.S., Plant Health Care Technician/Research Assistant is responsible for coordinating the scouts. 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, Emily Hansen, Ann Klingele, Pat Miller, Loraine Miranda, Julie Moore, Mary Noe and Wendy Vichick . 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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