

Plant Health Care Report

Scouting Report of The Morton Arboretum

June 14, 2019

Issue 2019.6

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?

Arrowwood viburnum (*Viburnum dentatum*) is in full flower (Figure 1)

Accumulated Growing Degree Days (Base 50): 521.5 (as of June 13)

Accumulated Growing Degree Days (Base 30): 2138.5 (as of June 13)

Insects/other pests

- Rose slug sawfly
- Four-lined plantbug
- Grape flea beetle
- Pine spittlebug
- More beneficials

Diseases

- Anthracnose of shade trees
- Sycamore anthracnose
- Downy leaf spot on hickory
- Witchhazel blight
- Guignardia on ivy

Miscellaneous

- Late leafing out, dieback and weather-related chlorosis

Weeds

- Creeping bellflower
- Helleborine



Figure 1 Arrowwood viburnum (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. 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 June 13, we have 521.5 base-50 growing degree days (GDD). The historical average (1937-2018) for this date is 590 GDD₅₀. Since January 1, we have had 23.88 inches of precipitation. Historical average (1937-2018) for precipitation Jan-June is 20.3 inches.

Location	B ₅₀ Growing Degree Days Through June 13, 2019	Precipitation (in) June 7-13, 2019
Carbondale, IL*	1164	
Champaign, IL*	903	
Chicago Botanic Garden**	434	
Glencoe*	271	
Chicago O'Hare*	608	
Kankakee, IL*	707	
Lisle, IL*	639	
The Morton Arboretum	521.5	.4"
Quincy, IL*	927	
Rockford, IL*	550	
Springfield, IL*	938	
Waukegan, IL* (60087)	437	
Waukegan, IL* (60085)	490	

**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

Rose slug sawfly (minor)

Some years, the rose slug sawfly (*Endelomyia aethiops*) is a big problem on roses. We have only had a few cases reported to us this year. The rose slug sawfly feeds on the upper layers of the leaf, leaving behind the lower epidermal layer and creating a "windowpane" effect (fig. 2). The larvae are greenish yellow with orange heads and are about ½ inch long when fully grown. They resemble caterpillars but are not. They are covered in slime that helps protect them from predators. When larvae mature, they lose their slimy coverings. Around mid-June, larvae will drop to the ground to pupate.



Figure 2 Rose slug sawfly damage and sawfly larva

Management: Minor infestations of rose slug sawfly can be controlled by using a forceful jet of water to dislodge the sawfly larvae or by handpicking. Although this insect looks like a caterpillar, it is not, so *Bacillus thuringiensis* var. *kurstaki* (Btk) will NOT control this pest. This insect will be pupating soon (or may be already doing so). The damage may be present, but the insect may not be.

Good website: <http://hort.uwex.edu/articles/roseslug-sawfly>

Four-lined plantbug (minor)

Be looking for the four-lined plantbug (*Poecilocapsus lineatus*). The nymphs are out, and we are seeing feeding damage on a wide range of plants. This insect feeds on 250 species, including many kinds of perennials, vegetables, and shrubs such as bluebeard, forsythia, and sumac. Feeding injury is frequently mistaken for leaf spots. Four-lined plantbugs have piercing, sucking mouthparts which they use to break plant cells and then flush the feeding wound with digestive juices. Damage appears as dark leaf spots which subsequently turn translucent (fig.3). The damage is more serious on herbaceous plants than on woody plants. Sometimes by the time the damage is noticed, the insect isn't there anymore. Both nymphs and adults feed on leaves, creating the spots.



Figure 3 Four-lined plantbug damage

Nymphs are red and will develop dark wing pads as they mature. The adult stage is 1/4" to 1/3" long and has four longitudinal black lines on its yellow or green back (fig. 4), thus the name. It's quite a shy insect that scurries away when you try to find it. The insect overwinters as eggs laid in slits cut into plant shoots. There is one generation per year.



Figure 4 Four-lined plantbug adult

Management: Some people try to hand-pick these insects, but their timidity makes them difficult to catch. Small populations don't generally need to be controlled

Good website: <https://extension.umn.edu/yard-and-garden-insects/four-lined-plant-bugs>

Grape flea beetle (minor)

Our scouts found grape flea beetle (*Altica sp.*) on summer grape (*Vitis aestivalis*) on the grounds both this year and last. We mention it for a couple of reasons. First, if you grow grapes, this insect is not a friend of yours. Luckily, it is considered a secondary pest of grapes, so not one that will wreck your vineyard, but still not wanted. Adults feed on the buds in early spring for a limited time. The larvae will feed on leaves later in the season, but they generally do minimal damage.

The second reason that we mention this pest is that the larvae look a lot like the larvae of the viburnum leaf beetle (VLB). So, if you see something that looks like VLB larvae on your grapes, it is not viburnum leaf beetle, it is grape flea beetle. VLB has NOT moved to a new host.

Management: This pest tends to do little damage, so management is seldom needed. If you do need to use insecticides, the most important time to control would be in spring when they attempt to feed on new buds of grape.

Good website: <https://articles.extension.org/pages/31592/grape-flea-beetle-altica-chalybea>

Pine spittlebug (potentially serious)

Spittlebugs are fairly common in our area and seen on a wide range of herbaceous hosts. Most of them are not of much concern. However, the spittlebugs found on conifers can do significant damage if the population is high. Spittlebugs can be identified by the frothy white mass (fig. 5) they produce on foliage and twigs. The spittle, consisting of plant juices, is made by the immature bug to keep it



Figure 5 Pine spittlebug

moist and protect it from its enemies. Damage is most serious on younger trees.

Management: High populations of pine spittlebug can be damaging, but can be managed by hosing the plants down forcefully with water. This may need to be repeated a few times. An insecticide may be needed to prevent damage to the tree when populations are high.

Good website: <https://extension.umd.edu/hgic/spittlebugs-trees-and-shrubs>

More beneficials

There is good news in the insect world. Our scouts are finding beneficial insects on a regular basis. They found ladybugs newly hatched out of their eggs. The scouts have also found assassin bugs twice this season. These insects are our friends because they prey on other insects that we don't like. This is just a reminder to know which insect you have before you try to kill it.

Pest Updates: Diseases

Anthracnose (minor)

Rain has been over-abundant this season. With a season this rainy, it is no surprise that anthracnose is already showing up. Anthracnose is primarily a foliar disease affecting many deciduous trees including ash, elm, oak, and maple. We are getting a number of reports of it on maple and oak, and the leaves are heavily spotted. Often, we don't see a lot of defoliation with anthracnose (except for sycamore anthracnose). This year looks like it might be a different case. Some of the maples that have been reported with anthracnose are shedding a few leaves. This will not be fatal, but it will put some additional stress on trees as their "food factories", the leaves, drop off prematurely. The food that trees make for themselves is different from what fertilizers provide, so extra fertilization is not warranted.



Figure 6 Anthracnose on oak

The fungi are able to infect the young, tender leaves, especially during cool and wet springs, like we've been having this year. The disease is caused by several different fungi. The fungi are host specific, so the maple fungus doesn't infect oak trees, and so on. Symptoms vary with the plant host, weather, and time of year when infection occurs, but this disease often produces brown or black blotches (fig. 6) and curled or twisted leaves. Infection is more severe when

prolonged spring rains occur after new growth is produced. Although the symptoms appear in late spring into the summer, the initial infection took place in the early spring at bud break and before the leaves hardened off. Once the symptoms show up, it is too late for any chemical applications to be effective.

Management: Cultural methods are usually sufficient to reduce the severity of anthracnose in our region. These include:

- Pruning trees to open up the canopy for better air circulation.
- Maintaining tree vigor with proper watering during times when rain is inadequate.
- Mulching around the base of the tree (always keep mulch away from the trunk).
- In the fall, cleaning up and destroying fallen leaves to reduce the source of inoculum.

Good website:

<http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-diseases/anthracnose-shade-trees>

Sycamore anthracnose (potentially serious)

Anthracnose is more serious on sycamore, so we are giving it an article of its own. At first, the cold season was just making sycamores leaf out slowly. Now sycamore anthracnose is killing the leaves that finally did come out. The disease may be noticeable now as these large trees are covered with shriveled leaves (fig. 7).

Sycamore anthracnose is caused by the fungus *Apiognomonia veneta*, and is more serious than the anthracnose we see on other shade trees. Sycamore anthracnose is common when we have cool, wet weather during leaf development. Considerable defoliation may occur in late spring, but trees normally bounce back and produce a second set of leaves in early

July that remain disease-free. We have actually seen a little of this starting to happen already on a couple of trees. Leaves that are infected in early spring often turn brown to black and shrivel while still small, and this may be mistaken for frost damage. Leaves that are infected in late spring may show brown foliar lesions that extend along the veins, often in V-shaped patterns. The leaves turn brown and may drop prematurely.

There are two other stages of this anthracnose: shoot and leaf blight and canker formation. Shoot and leaf blight results when the pathogen enters succulent shoots. It causes the rapid



Figure 7 Young leaf killed by anthracnose (left)

death of expanding shoots and leaves. The pathogen overwinters in twigs and is active whenever temperatures are high enough in the fall, winter, and spring. During winter, cankers (fig. 8) form on infected shoots and kill the buds. Repeated infection results in deformed shoots and witches brooms (dense clusters of twigs). Although this disease can weaken trees and increase their susceptibility to attack by other pathogens and pests, it is not lethal.



Figure 8 Stem canker caused by anthracnose

Management: Dead twigs should be pruned as they develop throughout the growing season. Rake and discard fallen leaves to reduce the source of inoculum. It is impractical to spray fungicides on large trees, but for smaller, specimen trees, the disease can be controlled with fungicides applied as leaves are opening. Systemic fungicide injections can also be used. If you want to plant a *Platanus* species and don't want to worry about sycamore anthracnose, you can plant a hybrid planetree that is resistant to the disease. Two common cultivars can be seen on the Chicagoland Grows website (<http://www.chicagolandgrows.org/trees/planetrees.php>)

Good website: <http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-diseases/anthracnose-shade-trees>

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. 9). 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 9 Lower surface of leaf showing white spots

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.

Witchhazel blight (potentially serious)

We are seeing symptoms of blight on witchhazel (*Hamamelis x intermedia*), caused by the fungus *Phyllosticta hamamelidis*. In the past, we have reported this as a leaf spot or blotch because the primary symptom has been irregular leaf blotches with very narrow dark-brown margins. The lesions often, but not always, begin at the leaf base and extend upward and outward eventually covering the entire leaf (fig. 10). This year we are reporting it as a blight as we are seeing a more severe infection that is killing the tip of the twig and all the attached leaves. This disease can defoliate witchhazels when severe.



Figure 10 Witchhazel blight

Management: Prune branches and give plants ample space to improve air circulation. This fungus overwinters in fallen leaves, therefore rake and destroy leaves to reduce the source of inoculum. Fungicides can be applied in spring when leaves emerge.

Guignardia on ivy (minor)

Boston ivy (*Parthenocissus tricuspidata*) are showing up, infected with a leaf spot caused by *Guignardia bidwellii*. The spot is relatively round with a dark margin (fig. 11). The dark fruiting bodies can also be found in this leaf spot. This disease also affects Virginia creeper (*Parthenocissus quinquefolia*). While this disease is fairly minor on ornamental plants, it also causes black rot of grapes, which is more serious.



Figure 11 *Guignardia* on Virginia creeper

Management: Removing fallen leaves may help to destroy the overwintering inoculum. On Boston ivy and Virginia creeper, removing badly infected leaves may help. Improving air flow may also help, since the spores are spread and germinate under moist to wet conditions.

Good website: <http://hort.uwex.edu/articles/guignardia-leaf-spot>

Miscellaneous

Late leafing out, dieback and weather-related chlorosis

One of the most popular questions in Plant Clinic this season has been “Why is my (name of plant) leafing out slowly/having dead twigs/turning yellow?” (fig. 12) We have seen serious dieback on a number of woody plants including boxwood (covered in issue 3, May 3), Japanese maple and burning bush. We have had stressful weather years since at least 2012, topped off with a brutal winter and an up and down spring, where the temperature was 80 degrees in the third week of April and below freezing (with snow) during the last weekend of April. It is no wonder that some plants are struggling.



Figure 12 Tree struggling to leaf out

To add insult to injury, we have had amazing amounts of rain, and many soils have been saturated. Roots need air as well as water and so roots may not be functioning properly. This means they are unable to bring water and nutrients up to the plant. This can lead to wilting of new foliage as well as chlorosis (yellowing) of leaves. We are even seeing leaves turn white on burning bushes. Some trees and shrubs also have cankered stems that are cutting off the water supply. Cankered stems may have broken or peeling bark, sunken areas or discolored bark. These stems need to be cut out. Clean pruning tools between cuts to minimize spread of these diseases.

This will be a year of a lot of pruning and waiting. It is always a good idea to prune out dead wood and cankered branches. Many plants will be able to recover partially or fully, but others will not be able to. We do not recommend fertilizing these plants. If the roots are compromised and not taking up water from the soil, they won't be able to take up nutrients either.

Weeds

Creeping bellflower (aggressive)

For the last few years, we have been receiving reports of an annoying weed making itself known in flower gardens and lawns. There are actually two plants that are nearly identical, ladybells (*Adenophora* spp.) and creeping bellflower (*Campunula rapunculoides*). The two plants differ only by a small structure within the flower. Ladybells and creeping bellflower are

closely related, but on doing a little research, it seems that the creeping bellflower may be the 'bad seed' of this family. It is the one that seems to be overly aggressive. Unfortunately, because the plants are so identical, if a friend shared some ladybells with you from her garden, you may actually have creeping bellflower.

Young plants have leaves that are heart-shaped to lance-shaped (fig. 13). This innocent looking plant has fleshy roots growing horizontally under the soil. These fleshy roots help to spread the plant and before you know it you have a healthy patch of them in your flower bed. If the plants are not removed, a flowering stalk with purple, nodding, bell shaped flowers will form.



Figure 13 Leaves of creeping bellflower

Management: Plants can be removed manually through digging, but any roots left will continue to produce new plants. As new plants develop and are actively growing, spray them with a weed killer containing glyphosate. Glyphosate will be absorbed by the leaves and taken down to kill out the roots. Do not get the glyphosate on desirable plants as it will kill them as well.

Helleborine (aggressive)

When is an orchid a bad thing? When it is helleborine (*Epicactus helleborine*), a non-native orchid. Last year, the Plant Clinic at The Morton Arboretum received several calls on this orchid turned weed. One of our volunteers has let us know it is showing up again this year. Why is it a weed? It spreads underground very aggressively via fleshy rhizomes. Large patches can develop quickly. Helleborine grows up to three feet tall and has a thick stem with dark green leaves that clasp the stem. The leaves are lance-shaped and up to six inches long. The flowers do look like orchids and vary in color, with a mix of green, pink and purple (fig. 14). Numerous flowers are produced on a spike.



Figure 14 Flowers of helleborine
(photo: Rob Routledge, Sault College, bugwood.org)

Management: Individual plants may be dug up, but you must be careful to get all of the underground structures or the plant will re-sprout. Various University websites indicate that glyphosate may not be successful when used as a single treatment. Re-application will most likely be needed. To get

the best results from glyphosate, cut the plant down and wait until new shoots begin to emerge. Actively growing new foliage absorbs the product most effectively.

Good websites: <https://www.minnesotawildflowers.info/flower/helleborine>
[msue.anr.msu.edu/news/homeowners battling a weedy orchid invading lawns and flower beds](https://msue.anr.msu.edu/news/homeowners_battling_a_weedy_orchid_invading_lawns_and_flower_beds)



Bartlett Tree Experts, Plant Clinic sponsor.

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.

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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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