

# Plant Health Care Report

Scouting Report of The Morton Arboretum

May 31, 2019

Issue 2019.5

Comments or concerns regarding PHCR should be sent to [syiesla@mortonarb.org](mailto: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](mailto:syiesla@mortonarb.org)

## Quick View

### What indicator plant is in bloom at the Arboretum?

Black locust (*Robinia pseudoacacia*) is in flower (Figure 1)

**Accumulated Growing Degree Days (Base 50): 302 (as of May 30)**

**Accumulated Growing Degree Days (Base 30): 1639 (as of May 30)**

### Insects/other pests

- Elm leafminer
- Viburnum leaf beetle update
- Hydrangea leaftier
- Assassin bug (good guy!)
- Galls, part one (it's really in this issue)

### Diseases

- Oak leaf blister
- Peach leaf curl
- Phomopsis tip blight

### Weeds

- Poison hemlock



Figure 1 Black locust

## 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 May 30, we have 302 base-50 growing degree days (GDD). The historical average (1937-2018) for this date is 362 GDD<sub>50</sub>. Since January 1, we have had 22.59 inches of precipitation. Historical average (1937-2018) for precipitation Jan-May is 15.6 inches.

Location	B <sub>50</sub> Growing Degree Days Through May 30 , 2019	Precipitation (in) May 24-30, 2019
Carbondale, IL*	872	
Champaign, IL*	602	
Chicago Botanic Garden**	231 (5/29)	1.92"
Glencoe*	134	
Chicago O'Hare*	376	
Kankakee, IL*	440	
Lisle, IL*	398	
The Morton Arboretum	302	3.49"
Quincy, IL*	631	
Rockford, IL*	317	
Springfield, IL*	642	
Waukegan, IL* (60087)	252	
Waukegan, IL* (60085)	288	

\*\*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**

### **Elm leafminer (minor)**

Elm leafminer (*Fenusa ulmi*) has been found on Princeton elm. Elm leafminer is a type of sawfly. The adults emerge in spring to lay eggs in elm leaf tissues. A week later, the eggs hatch, and young larvae begin to make mines in the leaves. The sawfly larvae will feed on the leaf tissue between the upper and lower epidermis of the leaves. The mines at first look like U-shaped brown spots between veins in the leaf. Eventually the insects will eat a hole through the leaf epidermis, fall to the ground, and excavate a hole in the soil to overwinter. Severe damage can result in defoliation. To test a leaf for miners, hold the leaf up to the light. If the insect is still in the leaf, you can see it. You will also be able to see frass (insect feces) which looks like pencil shavings within the mined area. They spend most of their life cycle burrowed about an inch in the ground.



Figure 2 Mines of elm leafminer showing larvae and frass

**Management:** Because leafminer damage is mostly cosmetic, insecticides may not be warranted. Heavy infestations may need to be managed with systemic insecticides.

Good website: [https://www.canr.msu.edu/news/common\\_spring\\_leafminers](https://www.canr.msu.edu/news/common_spring_leafminers)

### **Viburnum leaf beetle update (serious)**

Viburnum leaf beetle larvae have been feeding for less than a month, but they have already done quite a bit of feeding damage. We are receiving photos of plants whose leaves already have a lacy appearance. Now is the time to act to effectively manage this pest. They are easier to kill in the larval stage than in the adult beetle stage. The more of them we kill now, the fewer beetles we will have to contend with in July. For a full write-up on this pest see issue 4 (May 17).

**Management:** To treat larvae present now, some university websites are suggesting spinosad or insecticidal soap (this product must be sprayed directly on the larvae, so the lower sides of the leaves will need to be sprayed). Reducing larval populations now will help reduce both the damage done and the need for stronger insecticides when the beetles emerge. Cornell University suggests a single soil application of imidacloprid in spring to control adults this summer. Remember that imidacloprid is systemic in the plant and can go into flowers, possibly endangering pollinators.

### Hydrangea leaftier (minor)

This is an unusual little weirdo showing up in a couple of gardens. The hydrangea leaftier (*Olethreutes ferriferana*) is showing up on 'Annabelle' hydrangeas (*Hydrangea arborescens* 'Annabelle'). One of our scouts found this in her own neighborhood. This little caterpillar will tie leaves together to form a pouch-like structure at the end of the branch (see website below for photo). The caterpillar lives inside. In summer, the caterpillar will go to the ground to pupate. Adult moths will emerge in spring.

**Management:** Hand removal of the affected leaves is usually sufficient control.

Good website: <http://hyg.ipm.illinois.edu/article.php?id=359>

### Assassin bug (good guy!)

Every once in a while, it pays to stop and think for a minute. It is human nature to see an insect and want to get rid of it. We should rethink that. There are a lot of insects that are harmless. More importantly there are some that help us. Our scouts have already brought in a good guy, an assassin bug nymph (*Zelus* sp.). These insects feed on other insects. Sometimes they do wander into our homes and become a nuisance, but when they are outside, they are beneficial to the gardener.

The bottom line is to take a minute to think before you squash or spray an insect. Sometimes they are the good guys. The website below will give you good photos of this friend.

Good website: <https://articles.extension.org/pages/65268/assassin-bugs-as-beneficial-insects-in-the-vineyard>

### Galls, part one (it's really in this issue) (minor)

In the last full issue, our table of contents promised an article on galls, but the newsletter did not actually include that article. Oops. So, here it is in this issue. The vast majority of galls are harmless, but they are included here so you can learn to recognize them in the landscape. No control measures are needed.

Our scouts have already brought in a number of the usual suspects, including spindle galls, gouty vein gall and oak apple gall. In addition to that, samples of maple bladder gall have come in to Plant Clinic, and



Figure 3 Spindle gall on linden

one of our volunteers has contributed a new contender for our line-up, the ash midrib gall. So, let's take a look at these.

Spindle galls (fig. 3) occur on a variety of species, but our scouts found them on linden (*Tilia* sp.). The galls are long, thin, red, and cover the upper surfaces of leaves. They are caused by an eriophyid mite.



Figure 4 Gouty vein gall

Gouty vein gall (fig. 4) has been found on sugar maple (*Acer saccharum*). This gall does occur along the veins on the lower side of the leaves, deforming them. The insect that causes this gall is a midge.

Oak apple gall (fig. 5), true to its name was found on oak, specifically pin oak (*Quercus palustris*). This gall is caused by a cynipid wasp. The galls are globe-shaped, and filled with a spongy mass, and they are found on the leaves. These galls can be an inch or so in diameter when fully developed.



Figure 5 Oak apple gall in early season

Maple bladder gall (fig.6) is a common problem on red maple (*Acer rubrum*), silver maple (*Acer saccharinum*) and the hybrid between the two, Freeman maple (*Acer x freemannii*). We see this gall almost every year. It starts out as a small green bead and then changes to red and later in the season to almost black. We are seeing it in the red stage already. They are caused by eriophyid mites that overwinter in bark crevices and around callous growth of wounds, scars, and pruned branches.



Figure 6 Maple bladder gall

Ash midrib gall (fig. 7) is new to our little family of galls. Just what the ash trees need, one more problem. This maker of this gall is another midge. The gall forms along the midrib of some or all of the leaflets, causing the midrib to enlarge.



Figure 7 Ash midrib gall

## Pest Updates: Diseases

### **Oak leaf blister (minor)**

Oak leaf blister, caused by the fungus *Taphrina caerulescens*, has been found on bur oak and pin oak. Leaves develop wrinkled, raised, pale whitish-yellow blisters on their upper surface (fig. 8) 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 (like this year!!). Oak leaf blister is mostly a cosmetic problem. Infected leaves become distorted and may prematurely drop. The disease usually slows during the summer.



Figure 8 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://plantclinic.cornell.edu/factsheets/oakleafblister.pdf>

### **Peach leaf curl (potentially serious)**

Peach leaf curl is caused by the fungus *Taphrina deformans* (which is related to the fungus that causes oak leaf blister). This fungal disease is most severe when cool, wet weather is prevalent when the leaves are first emerging. Young, succulent leaves become puckered and deformed as they develop. The puckered areas turn yellow, pink and red (fig. 9). Later, as spores are produced, the leaf surfaces will turn gray or have a powdery appearance. Eventually, the leaves turn yellow and fall off. Diseased fruits can become distorted and swollen with discolored areas on the skin. Peach leaf curl generally does not kill the tree, but annual infections may weaken a tree and predispose it to other problems.



Figure 9 Peach leaf curl symptoms

**Management:** The fungus overwinters in buds. Fungicides are only effective when applied in fall after leaf drop or in spring before buds swell. Once the leaves have emerged, fungicides are no longer effective.

Good website:

<http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-diseases/peach-leaf-curl>  
<https://extension.psu.edu/disease-of-the-month-peach-leaf-curl>

### **Phomopsis tip blight (minor to potentially serious)**

Phomopsis tip blight is a leaf and shoot infection that affects the new, young foliage of various evergreens. This is a common disease of many junipers. The first symptom, yellow spots on young needles, occurs soon after infection. The fungus then enters young stem tissue causing dieback of the new shoot tips (fig. 10). Affected foliage turns dull red to brown and then ash gray. As the disease progresses, small lesions (cankers) form on the stems where infected and healthy tissue meet. Infection is spread primarily by splashing rain, wind, insects, or mechanical means. Repeated infections occur when temperatures are between 70 -80 degrees F, during periods of high humidity, and when foliage is wet. The fungus can persist in dead parts of infected plants for as long as two years.



Figure 10 Phomopsis tip blight on juniper

Severity of the disease is often tied to the age of the plant. Young plants may be seriously injured or even killed, while older plants are less severely injured. Repeated infections, year after year, may lead to decline.

**Management:** Cultural techniques, such as avoiding wetting of foliage, proper spacing of trees for good air circulation and sanitation (removal of dead tissue when feasible) will help reduce the incidence of disease. Small trees may need to be treated with fungicides in spring to protect them from damage.

Good websites: <http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-diseases/juniper-tip-blight>  
<http://plantclinic.cornell.edu/factsheets/junipertipblight.pdf>

## Weeds

### Poison hemlock (dangerous)

Poison hemlock (*Conium maculatum*) has become a common weed in recent years, popping up along roadsides and in home gardens. Poison hemlock is a member of the carrot family (which contains both edible and toxic plants, so beware!!). Most members of this family have the same type of umbrella-shaped flower cluster known as an umbel (fig. 11). Because the flower cluster of Queen Anne's lace and the flower cluster of poison hemlock look similar, plants may be incorrectly identified. This can lead to contact with a dangerous plant.



Figure 11 Flowers of poison hemlock (photo: S. Yiesla)

Poison hemlock is a large, non-native plant (often 6 feet or more) (fig. 12). The smooth stem is stout, has a ridged appearance and is marked with purple spots (fig. 13). The stem is hollow. Leaves are large and very ferny in appearance (fig. 14). Poison hemlock is a biennial plant, which means it will form foliage in the first year and flower and set seed in the second year. Plants in their second year will have the typical white flower cluster (umbel) of the carrot family. Queen Anne's lace has one red floret in the center of its flower cluster, poison hemlock does not.



Figure 12 Poison hemlock in first year of growth (photo S. Yiesla)

All parts of the plant are toxic and may lead to death if ingested. The plant's oil may be absorbed through the skin, so long sleeves and gloves will be needed when handling the plant.

**Management:** Plants can be cut down or dug out. This should be done before the plants go to seed and is most easily done when plants are small. Cover your skin during this process. Do NOT burn the plants. In spring, small, actively growing plants may be treated with an herbicide containing glyphosate.



Figure 13 Stem of poison hemlock (photo: S. Yiesla)



Good websites: <http://hyg.ipm.illinois.edu/article.php?id=380>  
<https://www.extension.purdue.edu/extmedia/fnr/fnr-437-w.pdf>



Figure 14 Leaves of poison hemlock (photo: S. Yiesla)



*Bartlett Tree Experts, Plant Clinic sponsor.*

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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://www.ipm.msu.edu/agriculture/christmas_trees/gdd_of_landscape_insects)

[http://extension.unh.edu/resources/files/Resource000986\\_Rep2328.pdf](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](mailto:plantclinic@mortonarb.org). Inquiries or comments about the PHCR should be directed to Sharon Yiesla at [syiesla@mortonarb.org](mailto:syiesla@mortonarb.org).