

Plant Health Care Report

Scouting Report of The Morton Arboretum

May 28, 2021

Issue 2021.5

For comments regarding PHCR, or to subscribe to email alerts regarding posting of new issues, contact Sharon Yiesla at syiesla@mortonarb.org.

Our report includes up-to-date disease and insect pest reports for northeastern Illinois. Due to the ongoing COVID-19 situation, volunteers will not be scouting in the early part of the season. Once the situation improves, both Arboretum staff and volunteers will be scouting for insects and diseases. Plant Clinic staff are working remotely, but still able to answer questions via email at plantclinic@mortonarb.org. or by phone at 630-719-2424 (Monday thru Friday, 11 am to 3pm).

Quick View

What indicator plant is in bloom at the Arboretum?

Black locust (*Robinia pseudoacacia*) is in full to late flower (fig. 1). It can serve as an indicator for a variety of pests. In late flowering (500-700 GDD), it can indicate emergence of white-marked tussock moth caterpillars.

Accumulated Growing Degree Days (Base 50): 401.5 (as of May 27)

Insects/other pests

- Rose slug sawfly and friends
- Sawflies
- Four-lined plantbug
- Boxwood psyllid
- Elm flea weevil
- Spittlebug
- Galls part 1

Diseases

- Powdery mildew on ninebark
- Phomopsis on spruce

Weeds

- Poison hemlock
- Weeds or not?



Figure 1 Black locust

Soil temperatures around Illinois (from Illinois State Water Survey)

This information will be provided in spring and fall issues only. For more data go to <https://www.isws.illinois.edu/warm/soil/> (you will need to set up an account to access data.) Root growth on trees/shrubs occurs when soil temps are above 45 degrees (use deeper depth).

Max. Soil temps For May 27, 2021*	St. Charles reporting station (north)	Champaign reporting station (central)	Carbondale reporting station (south)
2-inch, bare soil	72.4	84.3	88.1
4-inch, bare soil	70.2	80.3	79.8
4-inch, under sod	70.8	77.6	79.1
8-inch, under sod	68.4	74	72.6

* This is the maximum soil temperature recorded the day prior to publication of PHCR.

Degree Days (current and compared to past years) and rainfall

As of May 27, we have 401.5 base-50 growing degree days (GDD). The historical average (1937-2020) for this date is 309.5 GDD₅₀. The table below shows a comparison of GDD in different years. We are comparing the GDD reported in this issue with the GDD reported in the first issue of 2020, 2015 and 2014. These years were selected since publication dates of the first issue were within a day or two of each other. Glencoe, Lisle and Waukegan (60085) were not used in 2015 and 2014, so there is 'no report' from those stations.

Location	GDD as of 5/27/21	GDD as of 5/28/20	GDD as of 5/28/15	GDD as of 5/29/14
Carbondale, IL*	755	664	826	783
Champaign, IL*	557	440	678	614
Chicago Botanic Garden**	488	282.5	305 (5/26)	303.5 (5/28)
Glencoe*	232	141	No report	No report
Chicago O'Hare*	520	353	483	433
Kankakee, IL*	480	383	540	483
Lisle, IL*	517	372	No report	No report
The Morton Arboretum	401.5	355	377.5	340.5
Quincy, IL*	623	501	733	648
Rockford, IL*	433	317	382	351
Springfield, IL*	600	485	734	644
Waukegan, IL* (60087)	423	251	345	328
Waukegan, IL (60085)	464	280	No report	No report

**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 <https://gdctracker.msu.edu/>

Seasonal precipitation (rain and melted snow) in inches.			
	2021	2020	average
Jan	1.5	2.14	1.952
Feb	1.49	.85	1.769
Mar	1.24	4.15	2.536
April	1.39	4.37	3.692
May	2.45 (as of 5/26)	8.24	4.194
June		4.91	4.190
July		2.87	3.893
Aug		1.1	3.802
Year to date	8.07 (as of 5/26)	11.51 (as of 4/30)	9.949 (as of 4/30)
Total (Jan-Aug)		28.63 (Jan-Aug)	26.03 (Jan-Aug)

How serious is it?

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”. “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

Examples of insects that may emerge soon in northern Illinois (based on growing degree days)			
GDD (base 50)	insect	Life stage present at this GDD	Type of damage
400-600	Bronze birch borer	Larvae hatching out and beginning to enter bark	Tunneling under bark
400-600	Elm leaf beetle	First generation larvae emerging	Chewing leaves
400-600 (start) 1000-1200 (peak)	Emerald ash borer	Adults beginning to emerge	Mating and laying eggs
500-700	Euonymus scale	Crawlers emerging	Feeding on sap
500-600	Viburnum crown borer	Caterpillars hatching and entering bark	Tunnel under bark
700-800	Bagworm	Caterpillars emerging	Chewing foliage

Rose slug sawfly and friends (minor)

The roses are ready to bloom (or maybe already blooming) and then there it is, a hole (or many holes) in the leaf. Someone is chewing on your rose plants. The rose slug sawfly (*Endelomyia aethiops*) is a likely culprit, but there are other species willing to damage your roses as well (thus, the “and friends” in our article title). The larvae are greenish yellow with orange heads (fig. 2) 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. The rose slug sawfly feeds on the upper layers of the leaf, leaving behind the lower epidermal layer and creating a "windowpane" effect. (Other species may make bigger holes, all the way through the leaf.) Around mid-June, larvae will drop to the ground to pupate, so this is a short-lived problem.

Management: Minor infestations of rose slug sawfly (or friends) 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.



Figure 2 Rose slug sawfly larvae and damage

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

Sawflies (minor to potentially serious)

The rose slug sawfly is not the only sawfly hard at work. A couple of years ago, we saw a wide range of sawfly species on a wide range of plants. Last year was a bit slower for the sawflies. This year, we have seen European pine sawfly, rose slug sawfly and now we are getting reports of sawfly on creeping Jenny (*Lysimachia nummularia*). Even that indestructible plant has an enemy.

Sawflies are a large group of insects, literally hundreds of species. These insects can be confusing. As adults, they often have a fly-like or wasp-like appearance and may go unnoticed. As larvae, they look like caterpillars but are not true caterpillars (this means that *Bacillus thuringiensis* var. *kurstaki* will NOT kill them). Sawfly larvae and caterpillars do differ from one another. While each will have three pairs of tiny legs near the head end of the body, they differ in the number of prolegs at the far end. Prolegs are outgrowths in the abdomen that the insect uses like legs.

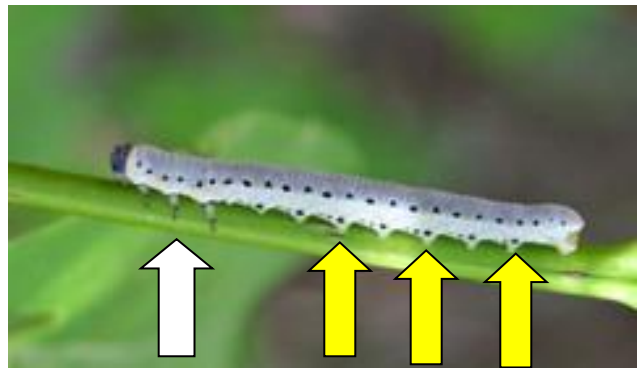


Figure 3 Sawfly larvae showing true legs (white arrow) and prolegs (yellow arrows)

Caterpillars have five or fewer pairs, while sawfly larvae have six or more pairs (fig. 3). So, to be sure who you have, you'll need to get close and count those prolegs. Caterpillars have hooks, called crochets, on the bottom of their prolegs, so they can hold on tight. Sawfly larvae lack these hooks and can easily be dislodged from their host, so hitting them with a stream of water

from the garden hose often gets rid of them. Sawfly larvae vary in color by species. Some are very colorful, while others are not. Some may be identified by spots, spines or other marks.

Sawfly larvae eat foliage, and the severity of their damage depends on the host, the size of the population and general health of the plant. High populations of sawfly can do a lot of damage and will add some stress to the host's life, but generally won't kill the host. Repeated defoliation year after year can lead to decline. Deciduous hosts can often tolerate more damage than evergreen hosts, and healthy plants can tolerate more defoliation than weak plants.

Management: Because sawfly larvae don't have hooks on the prolegs, they can't hold on tight. That makes them easy to wash off with the garden hose or to pick by hand.

Good websites: <https://www.extension.umn.edu/garden/insects/find/sawflies/>
<https://bugguide.net/node/view/319476>

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 variety 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 (fig. 4) which subsequently turn translucent. 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 4 Damage from four-lined plantbug

Nymphs are red and will develop dark wing pads as they mature. We are seeing them at this time. The adult stage (fig. 5) is 1/4" to 1/3" long and has four longitudinal black lines on its yellow or green back, 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 5 adult four-lined plantbug

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>

Boxwood psyllid (minor)

Boxwood psyllid (*Cacopsylla buxi*) is showing up around the region. The psyllids overwinter as tiny orange eggs in the bud scales of the boxwood. As the buds open, the psyllids hatch and begin to feed. The nymphs (fig. 6) are about 1/16th of an inch long, yellowish, and partially covered with a white secretion that protects them from parasitoids and chemical sprays. Their feeding causes cupping of the leaves. If your boxwood had this pest last year, the foliage from last year will show cupping. We have already had several reports of this pest of boxwoods.



Figure 6 Boxwood psyllid nymphs

Management: Damage is mostly aesthetic. Shearing boxwoods reduces the population as the insect or the eggs are removed in the process. This physical removal of infested tissue may be enough to keep the problem in check. We sometimes see ladybugs feeding on the psyllids.

Good website: <https://ag.umass.edu/fact-sheets/boxwood-psyllid>

Elm flea weevil (minor)

Elm flea weevil (*Orchestes steppensis*) (fig. 7) is being reported on elms. This pest has been in our area for nearly 20 years and has regularly caused foliage damage to elms during that time. Adult-feeding results in tiny shot holes in the leaves, and heavy feeding can cause newly expanding leaves to wither and turn brown. After feeding, the female weevil cuts a cavity into the leaf mid-vein and inserts an egg. The hatching larvae create blotch mines at the leaf tips. Larvae feed for about 2-3 weeks, and then pupate within the mined leaf. Very heavy feeding can reduce photosynthetic capacity of the tree, thereby impacting overall tree vitality. Dr. Fredric Miller tells me that "the elm flea weevil, for some reason, prefers Siberian elm and any hybrids that contain *U. pumila* in their genetics."



Figure 7 Adult elm flea weevil

Management: Insecticides are effective in controlling adults when they are present. Depending on how long the insecticide is effective, several applications may be needed. However, spraying a large elm may not be practical, especially for a pest whose damage is relatively minor.

Good website: <https://mortonarb.org/plant-and-protect/tree-plant-care/plant-care-resources/european-elm-flea-weevil/#overview>

Spittlebug (minor)

Just this week, I found spittlebug on several perennials in my own garden. They can be identified by the frothy white mass (fig. 8) they produce on foliage and twigs. It does look quite a bit like spittle. Spittlebugs suck plant sap but inflict little damage on mature plants. There are a number of species of spittlebugs that feed on a variety of plants.



Figure 8 Spittlebug

Management: Control is rarely necessary, and hosing the plants down forcefully with water is usually sufficient to remove most of the insects. This may need to be repeated a few times.

Good website: <https://extension.umn.edu/yard-and-garden-insects/spittlebugs>

Galls, part 1 (minor)

Galls are starting to show up on some of our favorite plants. 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.



Figure 9 Spindle galls on linden

So far, we have reports on spindle galls on a wild species of *Prunus* and on linden (*Tilia*). Spindle galls occur on a variety of plant species. The galls are long and thin and pop out of the upper surfaces of leaves (fig. 9). They are caused by eriophyid mite species.

Hackberry nipple gall (fig. 10) is also showing up on hackberry leaves. It is caused by a tiny insect called a psyllid. The adult female psyllid will lay eggs on the underside of the leaves. When the eggs hatch about a week later, the plant grows tissue around the nymphs in response to the feeding of the insect. Inside the gall resides a tiny yellow to orange psyllid nymph. Nymphs grow larger and emerge from the galls as adults in September. The adults actually look

a bit like miniature cicadas. Hackberries are the only known host of this psyllid. The psyllids are also called jumping plant lice because of their ability to jump. Hackberries frequently get nipple galls. As a matter of fact, I was taught to identify hackberries (*Celtis* spp.) by their warty leaves caused by the galls as well as their warty bark. The damage is not considered serious.



Figure 10 Hackberry nipple gall

Pest Updates: Diseases

Powdery mildew on ninebark (minor to potentially serious)

Powdery mildew on ninebark (*Physocarpus opulifolius*) is already being reported regularly to us this year. The straight species of ninebark is relatively resistant to powdery mildew, but some of the cultivars can be very susceptible and can sustain quite a bit of damage. Hundreds of plant species are susceptible to powdery mildew, but the disease is caused by many different species of fungi which are host specific. This means that the powdery mildew on coralberry will not infect lilacs and so forth.



Figure 11 Powdery mildew on ninebark

Powdery mildew appears as a superficial white to gray coating over leaf surfaces, stems, flowers, or fruits of affected plants. Initially, circular powdery white spots appear. These spots coalesce producing a continuous patch of “mildew.” On ninebark, the tips of branches often develop a thick coating of white powder (fig. 11), while other parts of the same plant may show very few symptoms. Later in the season, fungal fruiting bodies that look like black pepper under a hand lens will appear. Warm days and cool nights favor this fungal disease. The fungi that cause powdery mildew are deterred by water since spores will not germinate on wet leaves. However, the fungus still needs high humidity to infect the plant. Leaf curling and twisting result, and in severe infestations you may see premature defoliation and deformed flower buds. Although unsightly, powdery mildew is usually not fatal in the landscape.

Management: Infected plant parts should be removed as soon as symptoms appear. Dispose of fallen leaves. On ninebark, prune out infected tips. Water plants during periods of drought to keep them healthy. Put plants in locations where there is good soil drainage and sufficient sunlight. Provide proper plant spacing for good air circulation. Powdery mildew on some plants can result in significant damage, and fungicides may be needed. To obtain

optimum results, spray programs should begin as soon as mildew is detected. In the future, plant mildew-resistant cultivars and species.

Phomopsis on spruce (potentially serious)

In a previous issue, we covered *Cytospora* canker and *Rhizosphaera* needle cast, two common problems affecting spruce trees. There are other problems on spruce and one of them is *Phomopsis* canker, caused by fungal pathogens in the genus *Phomopsis*. In recent years, [Purdue University](#) and [Michigan State University](#) have been reporting an increase in cases of this disease. Sometimes when we visibly diagnose a spruce with *Cytospora* canker or *Rhizosphaera* needle cast, it may really be *Phomopsis*. All these diseases can have very similar symptoms and they can be confirmed with lab testing, which can be conducted at any state's University Plant Clinic (find your state's clinic here www.npdn.org).

Phomopsis infections do produce cankers, but they are not readily visible, like the cankers of *Cytospora*, which are associated with sap running down the trunk. The *Phomopsis* canker does not appear as sunken or discolored and does not lead to a flow of sap. To find the canker, you need to peel bark away to reveal the tissue underneath, the cambium. If the cambium is green, it is healthy; if it is brown, tan or gray, it is dead. To identify where the canker is, selectively pick at the bark until you find the point where dying tissue and healthy tissue meet. Scraping the bark at that point will reveal discolored or dark wood, if a canker is present. *Phomopsis* can appear as a tip blight or a needle cast, depending on how much damage the canker has done. Symptoms begin in the lower branches of the tree and move upward.

According to University Plant Clinic reports, samples of Norway spruce that seem to be infected with *Cytospora* have been tested and the real cause of the symptoms has often turned out to be *Phomopsis*.

Management: Like other canker diseases, there is no chemical management. Good maintenance of trees, and pruning out of infected branches several inches below the last symptoms is indicated. We all need to be aware that there are other spruce diseases moving into our area and the common diseases, *Cytospora* and *Rhizosphaera*, may not always be to blame. Close inspection of symptoms and laboratory testing are good tactics to employ. University of Illinois Plant Clinic is open and accepting samples during the pandemic, although in a more limited fashion. See this [link](#) for more information. Having a proper diagnosis will help save unnecessary treatments for a mistaken case of *Rhizosphaera*.

Good websites:

<https://www.purduelandscapereport.org/article/phomopsis-dieback-of-spruce/>

<https://bygl.osu.edu/node/270>

https://www.canr.msu.edu/news/michigan_awash_with_phomopsis_cankers_on_spruce_trees_and_seedlings

Pest Updates: Weeds

Poison hemlock (dangerous)

We have had one report of poison hemlock, fig. 12, (*Conium maculatum*) already. For the last few years, this has not only been prevalent along roadsides, but has also been popping up 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. 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.

Poison hemlock is a large, non-native plant (often 6 feet tall or more). The stem is stout and is marked with purple spots (fig. 13). It is also hollow. Leaves are large and very ferny (fig. 14) in appearance. 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.

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 it.

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.

Good website:

<https://www.extension.purdue.edu/extmedia/fnr/fnr-437-w.pdf>



Figure 12 First season growth of poison hemlock (photo S. Yiesla)



Figure 13 Spotted stem of poison hemlock (photo S. Yiesla)



Figure 14 Foliage of poison hemlock (photo S. Yiesla)

Weeds, or not?

There are plants that can really get 'busy' in the landscape. Does that automatically make them weeds? Two of these 'busy' plants are native plants. So, let's look at who is showing up in home gardens all over the region, as well as on the Arboretum grounds. Weed or not, you decide.

These two plants are related; they belong to the same genus. They are [butterweed](#) (*Packera glabella*) and [golden ragwort](#) (*Packera aurea*). Butterweed is a native of Illinois, but is far more common in the southern half of the state than it is in the Chicago region. Yet, we have had numerous reports of it this year. Last year I found one in my yard. This plant does well in partial to full sun and is reported to prefer a loamy soil, with moist to wet conditions. The one in my yard was growing up against the chimney in an area so dry and hard I have not even attempted to garden there. I was so impressed by this plant's tenacity that I let it stay there. Butterweed is actually fairly attractive, with yellow daisy-like flowers, that provide nectar for pollinators. It flowers for 6 to 8 weeks. The leaves are interesting too, being deeply and irregularly cut (fig. 15). Those leaves contain alkaloids which prevent rabbits and deer from feeding on them.



Figure 15 Butterweed

Golden ragwort is a cousin to butterweed and has similar yellow flowers that also provide for pollinators. The basal leaves of this plant are oval to almost rounded, with rounded teeth. Leaves higher on the stem are much smaller, narrower and deeply dissected (fig. 16). The leaves of this plant also contain alkaloids. I actually found this one for sale at a local garden center and bought it just to see how it would grow in my yard. It is doing well. It has already flowered and is making a lot of seeds for me.



Figure 16 foliage of golden ragwort

Are these plants weeds or wildflowers?

This is a decision each person has to make. They are native plants, but every native is not desirable (poison ivy is native, too). Weigh the pros (benefits to pollinators) and cons (potential to colonize too much) of each plant. I have linked the name of each plant to a webpage, so you

can gain more information to make that decision. I wanted to present these here since they are showing up so much in our area. Hopefully, this article at least answers the question “What plant is that?” for you.

Good websites: https://www.illinoiswildflowers.info/woodland/plants/gold_ragwort.htm
<https://www.illinoiswildflowers.info/wetland/plants/butterweed.htm>
<https://bygl.osu.edu/node/1023>



Bartlett Tree Experts, Plant Clinic sponsor

The Plant Health Care Report is prepared by Sharon Yiesla, M.S., Plant Knowledge Specialist and edited by Stephanie Adams, Ph.D., Plant Health Care Leader; 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.

Thank you...I would like to thank all the staff and volunteers that report disease and pest problems when they find them. Your hard work is appreciated.

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.

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

This report is available online at <https://mortonarb.org/about-arboretum/plant-health-care-report/>

For pest and disease questions, please contact the Plant Clinic. At this time due to the COVID-19 situation, the Plant Clinic building is closed. You can still contact the Plant Clinic via email at plantclinic@mortonarb.org. Emails will be answered during business hours Monday through Friday. Plant Clinic can also be reached by phone (630-719-2424), Monday thru Friday 11 am to 3pm. Inquiries or comments about the PHCR should be directed to Sharon Yiesla at syiesla@mortonarb.org.

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2021 Plant Health Care Report Index



Following is an index of the various subjects in this year's report. The number after each subject is the report number. For example, using the chart below, Cankers..... 1 means that it was discussed in the PHC report 2021.01 or the newsletter dated April 2, 2021. The index is updated with the publication of each full issue and is included at the end of each full issue.

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