

Plant Health Care Report

Scouting Report of The Morton Arboretum

May 14, 2021

Issue 2021.4

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?

Common lilac (*Syringa vulgaris*) is in full to late flower (fig. 1). It can serve as an indicator for a variety of pests. In late flowering (275-500 GDD), it can indicate emergence of oystershell scale and activity of alder leaf miner and birch leaf miner.

Accumulated Growing Degree Days (Base 50): 196.5 (as of May 13)

Insects/other pests

- Calico scale
- Aphids
- Viburnum leaf beetle update
- Ticks

Diseases

- Rust on buckthorn
- Peach leaf curl

Weeds

- Helleborine
- Purple deadnettle



Figure 1 Common lilac

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 13, 2021*	St. Charles reporting station (north)	Champaign reporting station (central)	Carbondale reporting station (south)
2-inch, bare soil	79	84.5	74.7
4-inch, bare soil	72	78.5	66.8
4-inch, under sod	63.2	69.9	66.2
8-inch, under sod	57.3	62.3	60.2

*Please note this change: I was previously using the temperature recorded for 9 am of the day of the PHCR publication. I have changed this to use the maximum soil temperature recorded the day prior to publication, to better reflect soil true soil temperatures. These readings should better serve the needs of the readers of PHCR.

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

As of May 13, we have 196.5 base-50 growing degree days (GDD). The historical average (1937-2020) for this date is 143 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 5/13/21	GDD as of 5/14/20	GDD as of 5/14/15	GDD as of 5/16/14
Carbondale, IL*	470	390	568	524
Champaign, IL*	287	191	424	374
Chicago Botanic Garden**	243	No report	151.5 (5/12)	162 (5/14)
Glencoe*	84	27	No report	No report
Chicago O'Hare*	262	125	258	220
Kankakee, IL*	230	142	313	273
Lisle, IL*	263	135	No report	No report
The Morton Arboretum	196.5	121.5	193.5	175.5
Quincy, IL*	365	263	504	400
Rockford, IL*	207	103	203	163
Springfield, IL*	329	235	484	403
Waukegan, IL* (60087)	203	64	164	160
Waukegan, IL (60085)	229	80	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://gddtracker.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	1.37 (as of 5/13)	8.24	4.194
June		4.91	4.190
July		2.87	3.893
Aug		1.1	3.802
Year to date	6.99 (as of 5/13)	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
300-700	Oystershell scale	Crawlers emerging	Feeding on sap
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	Emerald ash borer	Adults beginning to emerge	Mating and laying eggs
400-500	Pine needle scale	Crawlers emerging (National Phenology Network predicts they will emerge in about two weeks)	Feeding on sap

Calico scale (minor)

We have seen a number of common scale insect species over the course of the last few years, but this year we have a report of a less common species, calico scale (*Eulecanium cerasorum*). The Morton Arboretum Plant Clinic has one report of this pest on elm (*Ulmus* sp.). It can attack a variety of trees including crabapple, hackberry, honey locust, maple, pear, redbud, serviceberry, sweetgum and tulip tree.

Calico scale is a soft scale. The adult is black with white markings (fig. 2). There is one generation per year. This species overwinters as partly grown nymphs on branches and bark. As these begin to mature in spring, they get larger, take on their distinctive black and white coloring, and begin to lay eggs. The eggs will hatch, usually in mid-June in Northern Illinois (around GDD 750). After the crawlers emerge, the adult scale die and turn a brown to reddish-brown color. They generally remain attached to the tree, making the population look bigger than it really is. The crawlers will move to the leaves to feed along the veins. They will feed there all summer and then move back to the twigs and bark prior to leaf drop in the autumn.



Figure 2 Calico scale adults

Unless present in large populations, this can be a relatively minor pest for the host tree. It is often controlled by beneficial insects. One annoying thing, though, is the fact that this species can produce large quantities of honeydew, which drops onto whatever is under the tree. This leads to a sticky mess, and the honeydew also serves as a growth medium for black sooty mold, which can add to the mess.

Management: In low populations, there may be no need for management. Beneficial insects may keep this pest in check. Universities seem to vary on which insecticides may or may not be effective against this pest. Some of their websites are listed here for more information:

<https://bygl.osu.edu/node/1252>

<http://kentcoopextension.blogspot.com/2009/04/landscape-scale-insects-calico-scale.html>

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

<https://bygl.osu.edu/node/639>

Aphids (minor)

We are starting to see aphids showing up in the landscape. One of our volunteers reported aphids (possibly *Aphis viburniphila*) on arrowwood viburnum (*Viburnum dentatum*). There are a number of different species of aphids that vary in color: yellow, green, pink, black. They are all tear-drop shaped and have two cornicles on the back end (looks like twin tail-pipes) (fig. 3). Aphids are small, about 1/16".

These insects suck out sap from the plant. The feeding often leads to curled or distorted leaves. Uncurling the leaves exposes the insects. The aphids that were found on the viburnum were densely clustered on the stems rather than the leaves. Aphids also produce honeydew, which is a sticky substance. Sticky leaves are often noticed before the insects themselves. Aphid damage is generally fairly minor, but they can be vectors for viruses.

Management: Aphids are relatively easy to manage. Some species do not stay with a particular plant for the whole season. By the time the damage is noticed, the insects may have moved on. Aphids tend to feed in groups at the ends of branches. Clipping off those branch ends can get rid of the whole population quickly. Spraying the plant with a strong stream of water from the garden hose may also dislodge much of the population. There are also natural predators, like lady beetles (lady bugs), that will feed on aphids, so avoid insecticides and let the good insects do their job.

Good websites:

<http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-pests/aphids>
<https://extension.missouri.edu/publications/g7274>

Viburnum leaf beetle update (serious)

Earlier this week, a couple of plant clinic volunteers informed me that Viburnum leaf beetle (*Pyrrhalta viburni*) larvae had hatched out in their neighborhoods. The larvae are small at this time, but they are already munching away on leaves of arrowwood viburnum (*Viburnum dentatum*) and on Sargent's cranberry-bush viburnum (*V. sargentii*). This photo (fig. 4) gives a closeup view of the larva. They are actually very small at this time. See [issue 1](#) for a full write up of this pest.

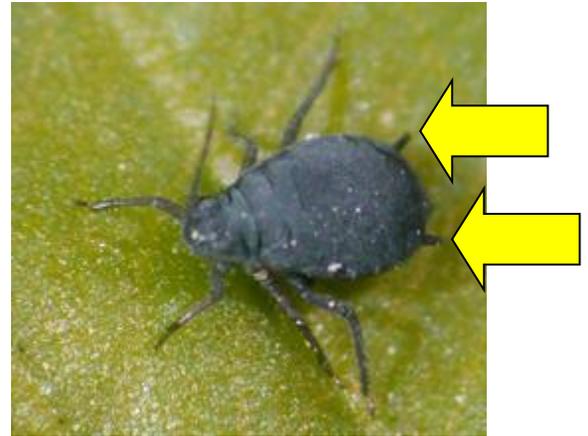


Figure 3 Aphid (arrows point to cornicles)



Figure 4 Close up of VLB larva

Ticks (potentially serious for humans)

We are getting reports that tick populations are high this year in some areas. Use caution in outdoor areas. Wear long sleeved shirts and long pants that are light in color. Use insect repellent as needed. Avoid brushy areas and tall grass when possible. Inspect your clothing and your person when you come inside. Remember that some ticks can carry disease.

Pest Updates: Diseases

Rust on buckthorn (minor, unfortunately)

This is a disease we always enjoy reporting, because it attacks an invasive plant. Unfortunately, it doesn't really damage the plant. Crown rust on buckthorn (*Rhamnus cathartica*) caused by the fungus *Puccinia coronata* is now showing up. Buckthorn is considered an invasive weed. A few years ago, the State of Illinois officially added it to the list of exotic weeds regulated by the Illinois Exotic Weed Act. The act states that "it shall be unlawful for any person . . . to buy, sell, offer for sale, distribute or plant . . . exotic weeds without a permit issued by the Department of Natural Resources". In addition, the recent [2020 Tree Census](#) shows that this invasive plant accounts for 36% of the trees in the Chicago region.

Like most rust diseases, buckthorn rust has an alternate host, oats. The disease is also known as crown rust of oats. It can greatly reduce the yield on a crop of oats. Symptoms of crown rust on buckthorn are bright orange swollen spots (aecia) on leaves (fig. 5) and petioles. There are many rust organisms, and this one is not the one that causes cedar apple rust. You may see rust diseases on other plants as well.



Figure 5 Rust on buckthorn

Management: None is required as buckthorn is not a desirable plant in the landscape. Removal of buckthorn is recommended since it is an exotic weed.

Good website: <http://ipm.illinois.edu/diseases/rpds/109.pdf>

Peach leaf curl (potentially serious)

Peach leaf curl is caused by the fungus *Taphrina deformans*. It is related to the fungus that causes oak leaf blister. Common hosts include peach and nectarine (*Prunus* spp.). This fungal disease is most severe when cool, wet weather is prevalent at the same time new leaves are emerging. Our weather has been a bit up and down this year with limited cool, wet periods, but the Plant Clinic has received one photo of an infected peach tree. Young, succulent leaves become puckered and deformed as they develop. The puckered areas turn yellow,



Figure 6 Peach leaf curl

pink and red (fig. 6). 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.

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

Good websites:

<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>

<https://extension.illinois.edu/blogs/good-growing/2016-06-21-peach-leaf-curl>

Pest Updates: Weeds

Helleborine (aggressive)

When is an orchid a bad thing? When it is helleborine (*Epipactus helleborine*), a non-native orchid. The Plant Clinic at The Morton Arboretum has already received emails this season on this orchid turned weed. Why is it a weed? It spreads underground very aggressively via fleshy rhizomes. Large patches can develop quickly. (Wisconsin lists this as a restricted invasive plant.) 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. Numerous flowers are produced on a spike (fig. 7).

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.



Figure 7 Flowers of helleborine (photo: Rob Routledge, Sault College, bugwood.org)

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)

Purple deadnettle (aggressive)

We have not really reported on purple deadnettle (*Lamium purpureum*) (fig. 8) before, but suddenly it is popping up everywhere in large populations. The Plant Clinic has already had a number of questions show up in our email about this plant, and we are also hearing from our volunteers about it. It is not a new weed by any means, but it has really taken off this year.

It comes from Europe and Asia, but is long-established here in the U.S. It is a member of the mint family, so it is related to (and often mistaken for) some other aggressive weeds like creeping Charlie and henbit. It is an annual plant that propagates itself through seeding, NOT through spreading underground structures. It can grow in full sun or light shade and growth is favored by cool weather in spring (we have had plenty of that, in between the hot spells).



Figure 8 Purple deadnettle

Management: This is a winter annual, which means the seeds germinate in fall and it overwinters as small plants. When spring arrives, the plants get bigger, produce flowers and then seeds. Since this is an annual, pulling it out before it sets seed can minimize future populations. Look for new populations of this weed again in fall and pull them out before winter. When it occurs in lawns, good cultural practices that encourage a good lawn will minimize this weed. These practices include mowing higher, proper use of fertilizer and aerifying the lawn. Common broadleaf weeds killer may be effective, but since this annual plant dies when summer turns hot, their use may not be warranted.



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 as a PDF at The Morton Arboretum website at

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

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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