

Plant Health Care Report

Scouting Report of The Morton Arboretum

April 30, 2021

Issue 2021.3

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?

Korean spice Viburnum (*Viburnum carlesii*) is in flower (fig. 1)

Accumulated Growing Degree Days (Base 50): 142 (as of April 29)

Insects/other pests

- Pine bark adelgid
- Update on pine sawfly
- Carpenter bees
- Hydrangea leaftier
- Update on Eastern tent caterpillar

Diseases

- Cedar rust
- *Cytospora* canker
- *Rhizosphaera* needle cast
- Wetwood, slime flux and *Fusicolla*

Weeds

- Creeping bellflower



Figure 1 Korean spice viburnum

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.) Crabgrass does not germinate until soil temps are above 55 degrees for 5 to 7 days (use more shallow depth for this). Root growth on trees/shrubs occurs when soil temps are above 45 degrees (use deeper depth).

Max. Soil temps For April 30, 2021	St. Charles reporting station (north)	Champaign reporting station (central)	Carbondale reporting station (south)
2-inch, bare soil	52	52.6	55.1
4-inch, bare soil	55.2	54.5	58
4-inch, under sod	54.5	59.8	61.9
8-inch, under sod	54.8	61.2	60.8

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

As of April 29, we have 142 base-50 growing degree days (GDD). The historical average (1937-2020) for this date is 36 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 4/29/21	GDD as of 4/30/20	GDD as of 4/30/15	GDD as of 5/1/14
Carbondale, IL*	346	279	333	284
Champaign, IL*	213	136	192	176
Chicago Botanic Garden**	185 (4/28)	58	45 (4/29)	45.5 (4/29)
Glencoe*	50	7	No report	No report
Chicago O'Hare*	201	76	112	80
Kankakee, IL*	177	94	135	106
Lisle, IL*	205	83	No report	No report
The Morton Arboretum	142	65	68	52
Quincy, IL*	262	185	274	197
Rockford, IL*	142	58	84	58
Springfield, IL*	234	171	244	199
Waukegan, IL* (60087)	146	29	56	51
Waukegan, IL (60085)	169	40	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		8.24	4.194
June		4.91	4.190
July		2.87	3.893
Aug		1.1	3.802
Year to date	5.62	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
100-450	Gypsy moth	larvae	Chewing leaves
300-700	Oystershell scale	Crawlers emerging	Feeding on sap

Pine bark adelgid (minor to potentially serious)

The Plant Clinic at The Morton Arboretum has received photos via email of pine bark adelgid (*Pineus strobi*) on white pine (*Pinus strobus*) recently. Pine bark adelgid adult females secrete a protective white, woolly mass, which covers the light-yellow eggs and can be found at the base of needles and on the bark of limbs and trunks (fig. 2). The photos we received showed an infestation on the limbs. This pest has five generations per year. The adelgid prefers white pine but also attacks Scots and Austrian pines. Healthy trees are not usually harmed by this adelgid, but high populations may require treatment.



Figure 2 Pine bark adelgid on trunk

Management: In mild cases, eggs and crawlers can be washed off now with a high-pressure water spray. In severe or repeated infestations, an insecticidal spray can be applied when the crawlers are seen (GDD 58-618). Lady beetles, hover flies, and lacewings feed on adelgids, so if these predators are present, it is best to use an insecticidal soap or a high-pressure water spray.

Update on pine sawfly

One of our Plant Clinic volunteers reports European pine sawfly larvae are out in DuPage County and actively feeding. This was confirmed by photos submitted with the report.

Carpenter bees (minor)

Carpenter bees are out. I did not even need to scout. One just flew into my garage and introduced itself. Carpenter bees bore into wood trim, outdoor wooden furniture, porch ceilings, dead tree limbs, and any weathered wood. They excavate tunnels and can cause damage. They look like bumble bees, but are larger and have a shiny black abdomen. The males cannot sting. Females will only sting if they are agitated. They do not nest in living wood. Carpenter bees have strong jaws and chew ½- inch, round entrance holes on the underside of wood. They then chew horizontal tunnels up to seven inches long. The bees are not actually eating the wood. They only create tunnels for nesting sites. We don't have any good pictures of this insect, so visit the websites listed below to see what carpenter bees look like.

Management: Insecticides can be applied to the tunnel entrances on cool evenings when bees are less active. Do not plug the tunnel entrance. All bees are pollinators, so don't kill them unless necessary.

Good web sites: <http://www.ces.ncsu.edu/depts/ent/notes/Urban/carpenterbees.htm>
<http://ento.psu.edu/extension/factsheets/carpenter-bees>

Hydrangea leaftier (minor)

The hydrangea leaftier (*Olethreutes ferriferana*) is an unusual little weirdo showing up in a couple of gardens. The hydrangea leaftier (as in "one who ties leaves together") is showing up on 'Annabelle' hydrangeas (*Hydrangea arborescens* 'Annabelle'). Two of our volunteers found this in their yards. This little caterpillar (fig. 3) will tie leaves together to form a pouch-like structure (fig. 4) at the end of the branch. The caterpillar lives inside. In summer, the



Figure 3 Larvae of hydrangea leaftier

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>

Update on Eastern tent caterpillar

Dr. Fredric Miller reports that he has seen small tents of Eastern tent caterpillar south of Springfield and in the St. Louis area.



Figure 4 Damage done by hydrangea leaftier

Pest Updates: Diseases

Cedar rust (potentially serious, but not life-threatening)

We are getting closer to the GDD range where infection of the cedar rust diseases can occur (GDD= 250-350). Spring has been fairly dry so far, but that has started to change in the past two days. A rainy period could get this disease (as well as others) going. But, since the crabapples are mostly leafed out and the leaves are hardening off, rust may not be as much of a problem this year. Plant Clinic did receive a photo yesterday of a cedar rust gall showing the jelly-like telial horns expanded about ¼ inch.

***Cytospora* canker (potentially serious)**

We continue to see a lot of dieback on spruces, as we have for the past several years. One source of this dieback is *Cytospora* canker. This fungal disease is common on stressed spruces. *Cytospora* canker rarely affects trees that are younger than 15 to 20 years old, because younger trees are more vigorous. Because we have been having so much environmental stress (drought, flooding, etc.), this disease has become very prevalent in the landscape. The disease usually starts on the lower branches of the tree and progresses upwards. Needles turn brown and finally drop, leaving dry, brittle twigs and branches. The fungus enters the tree through wounds and creates cankers within the bark. A thin coating of white resin is generally found on infected twigs and trunks (fig. 5).



Figure 5 Sap flow due to *cytospora* canker

Management: *Cytospora* canker is a stress-related disease, so, at minimum, trees should be kept mulched and watered well during dry periods. Remove infected branches promptly during dry weather to reduce the spread of the disease. It is imperative to clean pruning tools between cuts. Give newly planted spruces adequate space as dense planting is another common predisposing stress factor. If it is necessary to remove trees, it would be wise to consider diversifying the planting, rather than replanting with a lot of spruces. Having a lot of the same plant in the landscape can magnify a disease problem. There is no effective chemical control.

Good web site:

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

***Rhizosphaera* needle cast (serious)**

Another cause of dieback on spruces is *Rhizosphaera* needle cast, caused by the fungus *Rhizosphaera kalkhoffii*. This disease infects needles on the lower branches first and gradually progresses up the tree. Although needles become infected **when new needles are emerging**, symptoms do not appear until late fall or the following spring. Infected needles initially yellow, and small black dot-like fruiting bodies can be seen (with a hand lens) erupting through the stomata of the needles (Fig. 6). Later, the needles turn purple to brown and begin to drop (it may take 12-15 months from the time of infection for all these symptoms to develop). Although trees are not immediately killed by this pathogen, trees which lose needles for 3 to 4 consecutive years may die. If left unchecked, the disease can turn the tree into an undesirable landscape specimen in two to three years. Colorado blue spruce is highly susceptible to *Rhizosphaera* needle cast. White spruce is moderately susceptible and Norway spruce is relatively resistant. Hosts in other genera include true firs, Douglas-fir, and pines.

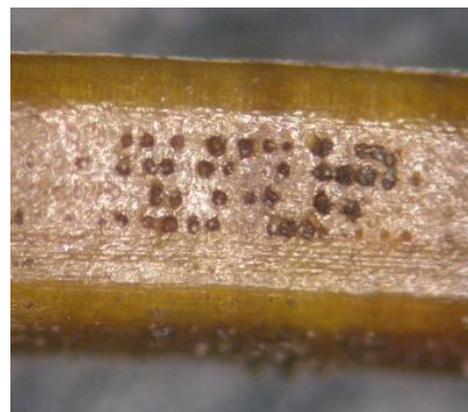


Figure 6 Fruiting bodies of *Rhizosphaera* needle cast emerging from stomates

Management: Prune off lower branches and provide adequate spacing between trees to improve air movement. Chemical controls are most effective if the disease is detected early. Fungicides should be applied when needles are half-grown (as soon as bud caps fall off) and again when fully elongated. Two years of applications are usually required to protect the current year's needles.

Good website:

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

Wetwood, slime flux and *Fusicolla* (minor)

The Morton Arboretum Plant Clinic has received a couple of emails regarding wetwood and slime flux. This bacterial condition is usually associated with elms and poplars, but can affect other tree species. The bark or trunk of the tree appears to be water-soaked (fig. 7). The causal organisms of wetwood are several different bacteria in the inner sapwood and heartwood. Gas produced by bacterial “fermentation” creates pressure that forces the wetwood ooze through openings and weak points in the tree. When wetwood ooze becomes a chronic problem, the resulting flow of ooze is called slime flux.



Figure 7 Wetwood/ slime flux

We are also getting email regarding a similar problem, but the flux is bright orange. This flux is caused by fungi, especially *Fusicolla merismoides*. We don't see this quite as often as we see wetwood, but it has already popped up a couple of times this spring. This disorder is fairly harmless and is a little different than wetwood. According to Clemson University, this organism does not actually cause disease to either the wood or foliage of the affected tree. The orange slime is growing on carbohydrates and water in the sap of the tree as it comes out of wounds and cut stumps. One of Plant Clinic volunteers captured a picture of it oozing out of a cut stump of a river birch.



Figure 8 *Fusicolla* on cut stump (Photo: Anne Finn)

Management: There is no cure for wetwood (or *Fusicolla*). Keep trees watered during dry periods because drought is thought to increase wetwood problems. The practice of boring a hole into the trunk and inserting a pipe to release gas pressure doesn't help, plus you are creating another open wound for organisms to colonize. Dead and weak branches should be removed. Bacteria are easily transmitted by tools so sanitize tools before pruning another tree.

Good websites:

<http://www.mortonarb.org/trees-plants/plant-clinic/help-diseases/wetwood>

<https://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=21997>

<https://hgic.clemson.edu/fusicolla-orange-slime-on-trees/>

Pest Updates: 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. Those complaints often come later in the season when this weed starts flowering, but we have already received emails about creeping bellflowers this season. 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. 9). 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 (fig. 10) will form.

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.



Figure 9 Low growing mat of leaves of creeping bellflower



Figure 10 Flowers of creeping bellflower



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.

Copyright © 2021 The Morton Arboretum

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.

2021.1	April 2	2021.8	July 9
2021.2	April 16	2021.9	July 23
2021.3	April 30	2021.10	August 6
2021.4	May 14	2021.11	August 20
2021.5	May 28	2021.12	September 10
2021.6	June 11	2021.13	September 24
2021.7	June 25		

Black knot.....	2
Cankers.....	1
Carpenter bees.....	3
Cicadas	1
Crabgrass preventer	1
Creeping bellflower.....	3
<i>Cytospora</i> canker	3
<i>Diplodia</i> tip blight.....	2
Eastern tent caterpillar	2, 3
Egg masses and more	1
European pine sawfly.....	2, 3
<i>Ficaria verna</i>	2
Fungicides, timing	1
Hydrangea leaf-tier	3
Indicator plants, what they tell us	1
Egg masses and more	1
Gypsy moth	2
Lichens	2
Pine bark adelgid.....	3
<i>Rhizosphaera</i> needle cast	3
Rust, cedar	3
Scale, euonymus	2
Scale, magnolia	1
Scale, oystershell.....	2
Snow mold on lawns	1
Viburnum leaf beetle	1
Vole damage to lawns	1
Pine bark adelgid.....	3
Wetwood, slime flux and <i>Fusicolla</i>	1