

Plant Health Care Report

Scouting Report of The Morton Arboretum



THE
CHAMPION
of TREES

April 28, 2023

Issue 2023.3

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

Our report includes up-to-date disease and insect pest reports for northeastern Illinois. Contact us via email at plantclinic@mortonarb.org or by phone at 630-719-2424 (Monday thru Friday, 10 am to 4pm). The Plant Clinic is also open to walk-ins, but a [timed entry](#) and payment of entry fee is required for non-members.

Quick View

What indicator plant is in bloom at the Arboretum?

Korean Spice Viburnum (*Viburnum carlesii*) is in flower (Figure 1).

Accumulated Growing Degree Days (Base 50) at The Morton Arboretum: 100 (as of April 27).

Miscellaneous

- Watch the weather, not the calendar

Insects/other pests

- European pine sawfly (update)
- Eastern tent caterpillar (update)
- Pine bark adelgid

Diseases

- *Volutella* blight on pachysandra
- *Cytospora* canker
- *Rhizosphaera* needle cast

Weeds

- Purple deadnettle



Figure 1 *Viburnum carlesii*

Soil temperatures around Illinois (from Illinois State Water Survey)

This information will be provided all season. For data from other reporting stations, go to <https://warm.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 4/27/2023*	St. Charles reporting station (north)	Champaign reporting station (central)	Carbondale reporting station (south)
2-inch, bare soil	71.3	73.7	62.7
4-inch, bare soil	68.6	63.2	59.7
4-inch, under sod	57.8	62.9	60.8
8-inch, under sod	52	57.8	59.5

* 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 April 27, we have 100 base-50 growing degree days (GDD) at The Morton Arboretum. The historical average (1937-2022) for this date is 29 GDD₅₀. The table below shows a comparison of GDD in different years. We are comparing the GDD₅₀ reported in this issue with the GDD reported in the first issue of 2022, 2017 and 2016. These years were selected since publication dates of the first issue were within a day or two of each other. Glencoe, and Waukegan (60085) were not used in 2017 and 2016, so there is 'no report' from those stations.

Location	GDD as of 4/27/2023	GDD as of 4/28/2022	GDD as of 4/27/2017	GDD as of 4/28/2016
Carbondale, IL*	332	290	516	454
Champaign, IL*	191	135	359	283
Chicago Botanic Garden**	160	73 (4/28)	129 (4/26)	85 (4/27)
Glencoe*	60	29	No report	No report
Chicago O'Hare*	161	89	214	171
Kankakee, IL*	150	94	258	215
Lisle, IL*	155	94	225	191
The Morton Arboretum	100	73	171.5	128
Quincy, IL*	218	192	418	350
Rockford, IL*	121	48	169	130
Springfield, IL*	219	167	373	308
Waukegan, IL* (60087)	131	64	134	103
Waukegan, IL (60085)	147	71	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

Seasonal precipitation (rain and melted snow) in inches.			
	2023	2022	Historical average (1937-2022)
Jan	2.85	1	1.935
Feb	4.88	2.61	1.775
Mar	2.29	3.88	2.536
April	2.08 (thru 4/27)	3.88	3.667
May			
June			
July			
Aug			
Sept			
Year to date	12.1 (thru 4/27)	11.37 (thru April)	9.91 (thru April)

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.

Miscellaneous

Watch the weather, not the calendar

When can I plant my annual flowers? What month should I treat my crabapple for apple scab? Is it time to divide my perennials? The Plant Clinic at The Morton Arboretum receives a lot of calls and emails about when to do certain garden tasks. Those asking the question are usually hoping to get a specific week or month to do that task. That has never been an easy thing to do and these days, it is nearly impossible to be that specific.

Why is that? The answer is, the weather. Let’s look at some recent weather. In the first week of April we had strong thunderstorms and even tornadoes. The next week, temperatures were in the 80’s. Then there were freezes for the next two nights. That was followed by colder temperatures. Midwestern weather has always been a bit changeable, but now it is really a roller coaster.

This type of weather really makes it difficult to time garden tasks. Stormy weather keeps us out of the garden altogether. Heavy rains and flooding make it impossible for us to dig holes to plant a tree, or possibly even walk in our backyard, without damaging the soils. High temperatures affect plant (and insect) development. The high temperatures we had in early April pushed many plants to flower quickly. The magnolias were gorgeous, but many flowered for only a week. The native wildflower, bloodroot, was finished flowering in two to three days. Heat can also push leaves to open more quickly than expected. If we assume that we should spray crabapples in May to protect them from apple scab, we may miss the window to treat if the heat causes leaf buds to open early. To make a decision on when to treat, we have to look at the weather AND the stage of development of the plant, not the date on the calendar. Luckily, both the weather and our plants are easy to observe. We just have to look.

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
100-200	Elm flea weevil	Overwintering adults and larvae	Chewing leaves
100 (possibly less)	Viburnum leaf beetle	Larvae (may be feeding when leaves are half expanded)	Chewing leaves
100-200	Zimmerman pine moth	Caterpillars emerging	Chewing leaves
145-200	Spongy moth (formerly gypsy moth)	Caterpillars just hatching	Chewing leaves

European pine sawfly (update)

We had a confirmed sighting of European pine sawfly late last week in the Downer's Grove area. This insect usually starts coming out around 100 GDD₅₀. [See issue 2](#) for the full write up on this pest.

Eastern tent caterpillar (update)

Entomologist Dr. Fredric Miller reports that Eastern tent caterpillar has been found in Joliet. The webs are about the size of a fist. Due to the cold temperatures, the caterpillars are tucked into the webbing. He advises delaying the use of B.t for control until the weather warms up and the caterpillars come out to feed. They need to ingest the product for it to be effective. Removal of the webbing is a good management measure right now while they are all inside. You can get the entire population at one time. [See issue 2](#) for the full write up on this pest. It is likely that other pests that emerge at this GDD level are also emerging. See the table above for a few examples.

Pine bark adelgid (minor to potentially serious)

The Plant Clinic at The Morton Arboretum has received one report 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. The photos we received showed an infestation on the trunk (fig. 2) of the tree. 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 (GDD₅₀ 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.

Pest Updates: Diseases

***Volutella* blight on pachysandra (potentially serious)**

Our scouts have been out and found some *Volutella* blight on Japanese pachysandra (*Pachysandra terminalis*). In most springs, we see this disease right after snow-melt, and the plants tend to outgrow the disease quickly. In the last few years, when we had heavy rains, this disease ran rampant and did a lot of damage to large, established plantings. With the milder winter and little snow cover, we were not expecting to find much *Volutella* this season, but there is some. The infections we are seeing this year on the grounds are minor, but the Plant Clinic at The Morton Arboretum has received some photos via email showing more serious infections.

Volutella blight, caused by the fungus *Volutella pachysandricola*, will cause leaf blight and stem cankers on pachysandra. Early spring symptoms are brown to tan leaf spots. These may be confused with winter desiccation. Concentric circles (fig. 3) form within the spots and are diagnostic for this disease. This is what we are seeing at this time. The spots caused by *Volutella* will enlarge and may eventually cover the entire leaf. Leaves may eventually turn yellow and fall off the plant. Stems turn dark and die. During extended wet periods, salmon- or

peach-colored fungal spore masses may be visible. Eventually, large patches of the ground cover may become infected and die.

Volutella is an opportunistic pathogen. Damage from winter may allow this disease to get started. This year, the up and down weather we have been having could be playing a role in stressing the plants. *Volutella* can infect a plant any time during the growing season but is more common during periods of rainy weather. Infections tend to diminish as the weather becomes drier in the summer, but the high humidity created by densely planted and heavily mulched beds can promote the blight. Stress from overcrowding, too much sun, winter injury, and shearing may increase susceptibility to stem blight. Older and injured plant parts of Japanese pachysandra are more susceptible to the disease than young succulent tissue.



Figure 3 *Volutella* on pachysandra

Management: Avoid piling snow on pachysandra in winter as this can promote disease development. Pachysandra prefers filtered sun or full shade, and will be stressed by too much sun, making them more susceptible to blight. Plants should be watered during dry periods by using drip irrigation and/or by watering early in the day to allow foliage to dry out. Avoid working with plants when they are wet to prevent the spread of disease. Remove and discard diseased leaves and plants as soon as symptoms are visible to limit spread to healthy plants. Clean up fallen leaves and other debris that may have accumulated on top of ground covers. Thin and divide overcrowded plants when the weather is dry to improve air circulation. Avoid over-fertilization, which causes dense foliage that encourages infection. Fungicides may be helpful in the early stages of the disease.

Good websites:

<https://mortonarb.org/plant-and-protect/tree-plant-care/plant-care-resources/ground-cover-diseases/>

<http://ag.umass.edu/landscape/fact-sheets/volutella-blight>

***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 is more common on trees that are older than 15 years, 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 often enters the tree through wounds, but on trees that are highly stressed, the pathogen may enter through natural openings. Cankers develop under the bark. A thin coating of white resin (fig. 4) is generally found on infected twigs and trunks.



Figure 4 Sap flow due to *Cytospora* canker

Management: Since *Cytospora* canker is a stress-related disease, at a 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 more spruces. Having a number of the same plant in the landscape can magnify a disease problem. There is no effective chemical control.

Good website: <https://mortonarb.org/plant-and-protect/tree-plant-care/plant-care-resources/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. Infection occurs on new needles as they are emerging, but symptoms do not appear until late fall or the following spring. Infected needles initially turn yellow, and small black dot-like fruiting bodies (fig. 5) can be seen with a hand lens, erupting through the stomata of the needles. 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.

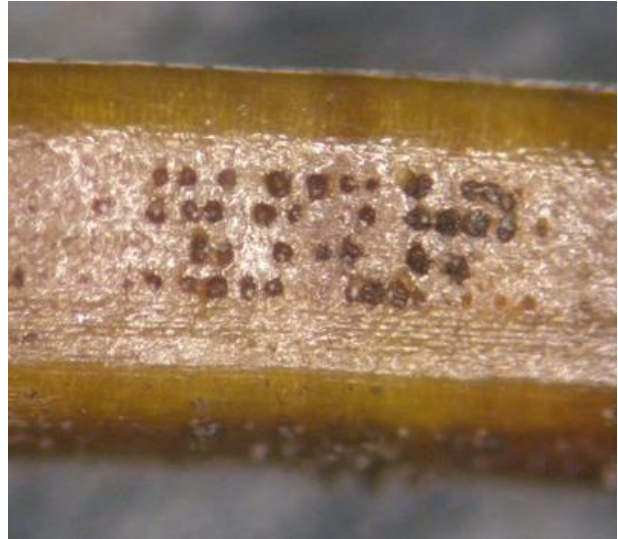


Figure 5 Fruiting bodies of *Rhizosphaera* emerging from stomates.

Management: Prune off dead or diseased branches and provide adequate spacing between trees to improve air movement. Chemical controls are most effective if the disease is detected early.

Fungicides treatment should begin when needles are half-grown (as soon as bud caps fall off). Follow label directions for timing of additional treatments. Two years of applications are usually recommended.

Good website:

<https://mortonarb.org/plant-and-protect/tree-plant-care/plant-care-resources/spruce-diseases/>

Pest Updates: Weeds

Purple deadnettle (aggressive)

For the last couple of years, we have been seeing purple deadnettle (*Lamium purpureum*) popping up everywhere. This is not a new weed by any means, but it really took off last year, quickly forming large populations. Even though spring has been a bit slow, the Plant Clinic has already had a number of questions about this weed, so be prepared.

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. The stems of this plant are upright and unbranched. It is usually about three inches tall and topped with small light-purple to purple-pink flowers (fig. 6). The young leaves at the top of each stem are often tinged with purple. 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).

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 aerating the lawn. Common broadleaf weed killers may be effective, but since this annual plant dies when summer turns hot, their use may not be warranted.



Figure 6 Purple deadnettle



Bartlett Tree Experts, Presenting Sponsor of the Plant Clinic.

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 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. Our volunteer scouts for 2023 are Deb Link, Maureen Livingston, Loraine Miranda, and Molly Neustadt.

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://mortonarb.org/about-arboretum/plant-health-care-report/>

For pest and disease questions, please contact the Plant Clinic. You can contact the Plant Clinic via email at plantclinic@mortonarb.org. Emails will be answered during business hours Monday through Friday. You can call the Plant Clinic by phone (630-719-2424) or visit in person, Monday thru Friday 10 am to 4 pm. On weekends and national holidays, Arboretum members need [a timed entry ticket](#) to enter the Arboretum and visit Plant Clinic in person. Non-members need [a timed ticket](#) every day and must pay the entry fee.

Inquiries or comments about the PHCR should be directed to Sharon Yiesla at syiesla@mortonarb.org.

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2023 Plant Health Care Report Index



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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, Cicadas..... 1 means that it was discussed in the PHCR 2023.01 or the newsletter dated April 7, 2023. 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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