

Plant Health Care Report

Scouting Report of The Morton Arboretum



THE
CHAMPION
of TREES

April 29, 2022

Issue 2022.3

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. This year we resume our on-grounds scouting program. Plant Clinic staff and volunteers are back working on-site this year. Contact us via email at plantclinic@mortonarb.org or by phone at 630-719-2424 (Monday thru Friday, 10 am to 4 pm). The Plant Clinic is also open to walk-ins, but a [timed entry](#) for the Arboretum is required and non-members need to pay the entry fee.

Quick View

What indicator plant is in bloom at the Arboretum?

Redbud (*Cercis canadensis*) is in very early flower (Figure 1).

Accumulated Growing Degree Days (Base 50): 73 (as of April 28)

Miscellaneous

- It's all about the weather
- Wise use of pesticides

Diseases

- *Volutella* blight on pachysandra
- Wetwood, slime flux and *Fusicolla*
- *Cytospora* canker
- *Rhizosphaera* needle cast

Weeds

- Purple deadnettle



Figure 1 Redbud in flower

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://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 4/28/2022*	St. Charles reporting station (north)	Champaign reporting station (central)	Carbondale reporting station (south)
2-inch, bare soil	51.9	61.8	70.4
4-inch, bare soil	50.8	57.5	63.2
4-inch, under sod	50.1	57.9	64.3
8-inch, under sod	50.1	58.2	60.2

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

Degree Days (current and compared to past years)

As of April 28, we have 73 base-50 growing degree days (GDD) at The Morton Arboretum. The historical average (1937-2021) for this date is 35 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 2021, 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 4/28/22	GDD as of 4/29/21	GDD as of 4/30/15	GDD as of 5/1/14
Carbondale, IL*	290	346	333	284
Champaign, IL*	135	213	192	176
Chicago Botanic Garden**	73 (4/28)	185 (4/28)	45 (4/29)	45.5 (4/29)
Glencoe*	29	50	No report	No report
Chicago O'Hare*	89	201	112	80
Kankakee, IL*	94	177	135	106
Lisle, IL*	94	205	No report	No report
The Morton Arboretum	73	142	68	52
Quincy, IL*	192	262	274	197
Rockford, IL*	48	142	84	58
Springfield, IL*	167	234	244	199
Waukegan, IL* (60087)	64	146	56	51
Waukegan, IL (60085)	71	169	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://gdtracker.msu.edu/>

Seasonal precipitation

Seasonal precipitation (rain and melted snow) in inches.			
	2022	2021	Historical average (1937-2021)
Jan	1	1.5	1.946
Feb	2.61	1.49	1.765
Mar	3.88	1.24	2.520
April	3.83 (thru 4/28)	1.39 (whole month)	3.665 (whole month)
May			
June			
July			
Aug			
Sept			
Year to date	11.32 (thru 4/28)	4.27 (Jan thru April)	9.9 (Jan 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

It’s all about the weather

The weather always plays a big role in disease and insect development. Last year at this time, we were having a very dry spring, but a warmer one. When we published the third full issue of PHCR, we had accumulated 142 GDD and were more than 4 inches below average on rainfall. This year as we publish our third full issue we only have 73 GDD and are already above average on rainfall by 1.42 inches.

A lot of fungal infection occurs when new leaves are emerging from their buds. Rain plays an important role in that infection. Fungi need water. When plants were unfurling their new foliage last year, we were having a lot of dry weather, and as a result, there was a lot less disease infection. We spent more time on insects last year than on diseases. This year’s rainfall is above average and coming very regularly so far. If this regular rainfall continues to occur through the time of new leaf emergence, we may see more disease this year. The temperature, of course, will also play a role.

Wise use of pesticides

We get a lot of questions about pesticide use, especially in regard to safety (for humans, pets and bees). “Safe” is a difficult word to use when talking about pesticides (insecticides, fungicides, herbicides). With any chemical, whether it is a pesticide or a household cleaner, there is always some risk. If a pesticide is known to be toxic to bees, fish or birds, EPA mandates that information be noted on the product label in a section called “Environmental Hazards”. There is ongoing research, however, that is indicating that some pesticides might not be toxic to bees, but may be detrimental to them in some way.

Many people are concerned about pesticides and cancer for both humans and pets. Many of these questions don’t yet have an answer. Again, there is a lot of ongoing research about this topic. The purpose of this article is not to offer answers, but to remind people to be careful when using these products. Here are some tips to consider:

- If you are not comfortable using pesticides, don’t use them.
- Evaluate the pest or disease. Is it serious enough to warrant treatment? Many problems are more cosmetic than harmful and don’t really need treatment at all.
- Look for alternatives to pesticides. There are often non-chemical measures that can be used to minimize pests. These include pruning out affected parts, proper watering and fertilizing, and using traps or barriers. Be wary of ‘home remedies’ often touted on the internet. Many don’t work, some are even dangerous.
- Learn to live with a few weeds/pests. Years ago, we talked about pest control, now we talk about pest management. Complete control of a pest is not always feasible, management is.
- Always have a pest properly identified so that if you chose to use a pesticide, you can select the right one for the purpose.
- Read and follow the label to ensure the most accurate and safest use of the product.
- Use the pesticide at the right time so it is as effective as possible.
- Don’t use more than the label calls for. More is not better.
- Limit exposure for yourself, your family and pets.
- Don’t spray pesticides on plants that are in flower as this is when pollinators will be visiting and this may put them at risk.

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
20-90	Magnolia scale	Overwintering nymphs become active	Feeding on sap
100 (possibly less)	Viburnum leaf beetle	Larvae (may be feeding when leaves are half expanded)	Chewing leaves
100-200	Eastern tent caterpillar	Caterpillars (www.usanpn.org predicts these may emerge in the next week)	Chewing leaves
100-200	Pine sawfly	larvae	Chewing needles
100-200	Spongy moth (formerly gypsy moth)	Caterpillars hatching	Chewing leaves

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. The infections we are seeing this year, so far, are resulting in small patches of dead plants. It will be worth watching for this disease in pachysandra plantings, since rainfall has been plentiful this year.



Figure 2 *Volutella* on pachysandra

Volutella blight, caused by the fungus *Volutella pachysandricola*, will cause leaf blight and stem cankers on pachysandra. Symptoms first noticed in early spring are brown to tan leaf spots that can be confused with winter desiccation. The spots will enlarge and may eventually cover the entire leaf. Concentric circles (fig. 2) form within the spots and are diagnostic for this disease. This is what we are seeing at this time. 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. It can infect a plant any time during the growing season but is more common during periods of rainy weather, like we are having right now. 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.

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 and thus 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>

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, mulberries and poplars, but can affect other tree species. The bark or trunk of the tree appears to be water-soaked (fig. 3). 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 3 Wetwood/slime flux

We are also getting email regarding a similar problem, but the flux is bright orange (fig. 4). 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 the Plant Clinic volunteers captured a picture of it oozing out of a cut stump of a river birch.



Figure 4 *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:

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

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

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

***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 often



Figure 5 Sap flow due to *Cytospora* canker

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. 5) is generally found on infected twigs and trunks.

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 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. 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 (fig. 6) 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.

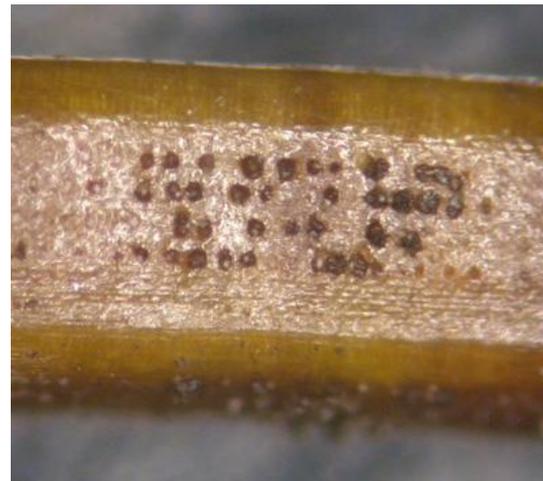


Figure 6 Fruiting bodies of *Rhizosphaera* emerging from stomates

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 required to protect the current year's needles.

Good website:

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

Pest Updates: Weeds

Purple deadnettle (aggressive)

Last year, deadnettle (*Lamium purpureum*) suddenly popped 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.



Figure 7 Purple deadnettle

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. 7). 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.



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 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. Our scouts this year 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. Arboretum members need [a timed entry ticket](#) is needed to enter the Arboretum and visit Plant Clinic in person. Non-members need [a timed ticket](#) and must pay the Arboretum entry fee.

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

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2022 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 2022.01 or the newsletter dated April 1, 2022. 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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