

Plant Health Care Report

Scouting Report of The Morton Arboretum

July 24, 2020

Issue 2020.9

Our report includes up-to-date disease and insect pest reports for northeastern Illinois. You'll also find a table of accumulated growing degree days (GDD) throughout Illinois, precipitation, and plant phenology indicators to help predict pest emergence. Due to the current COVID-19 situation, we will not be scouting on the Arboretum grounds at this time. We will be including information about pest and disease problems based on questions emailed to The Arboretum's Plant Clinic. We are working remotely, but still able to answer questions via email at plantclinic@mortonarb.org

We are continuing to use last year's format: full issues alternating with growing degree day (GDD) issues; focus on more serious pests; minor pests covered in shorter articles; alerts issued for new major pests. Readers who receive our email blasts that announce the newsletter is posted online will continue to receive them this year. To be added to the email list, please contact me at syiesla@mortonarb.org. Comments or concerns regarding PHCR should be sent to the same email.

Quick View

What indicator plant is in bloom in Dupage County?

Queen Anne's lace (*Daucus carota*) is beginning to flower (Figure 1)

Accumulated Growing Degree Days (Base 50): 1658.5 (as of July 23)

Accumulated Growing Degree Days (Base 30): 4168.5 (as of July 23)

Insects/other pests

- Grubs in the lawn
- Zimmerman pine moth
- Galls, Chapter 4

Diseases

- Bur oak blight
- Rust on lawns
- Guignardia on buckeye



Figure 1 Queen Anne's lace

Thank you!

Writing the Plant Health Care Report has been more challenging this year without the regular scouts in the field. As I have mentioned previously, I can glean information from the Plant Clinic email, the scouts looking around their own neighborhoods and observations I can make while driving around the area. I am also receiving help from our Plant Clinic volunteers. They live in many different communities (and counties) in the Chicago region and they are very observant. I put out the call to them to tell me what they are seeing. The response is great and has allowed me to write a fuller and more in-depth newsletter than I thought I would. Never doubt the power of a group of volunteers. Thanks to them for helping and thanks to you for reading.

Degree Days and Weather Information

We are once again offering Lisle readings right above the Arboretum readings. The spread between these two sites shows that temperatures can vary over a short distance, which means growing degree days can be quite variable as well.

As of July 23, we have 1658.5 base-50 growing degree days (GDD). The historical average (1937-2019) for this date is 1527 GDD₅₀. Since January 1, we have had 27.38 inches of precipitation. Historical average (1937-2019) for precipitation Jan-July is 25.2 inches. Remember that the rain has not been distributed evenly through the year. We had 12.6 inches April through May and only 7.6 June through today.

Location	B ₅₀ Growing Degree Days Through July 23, 2020
Carbondale, IL*	2182
Champaign, IL*	1844
Glencoe*	1220
Chicago Botanic Garden**	1597
Chicago O'Hare*	1690
Kankakee, IL*	1713
Lisle, IL*	1730
The Morton Arboretum	1658.5
Quincy, IL*	1936
Rockford, IL*	1598
Springfield, IL*	1907
Waukegan, IL* (60087)	1461
Waukegan, IL* (60085)	1523

*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 <http://www.gddtracker.net/>

**Thank you to Chris Henning, Chicago Botanic Garden, for supplying us with this information.

How serious is it?

This year, articles will continue to be marked to indicate the severity of the problem. 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”. Articles that discuss a problem that is seen now, but would be treated with a pesticide at a later date, will be marked “treat later”. Since we will cover weeds from time to time, we’ll make some categories for them as well. “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

Grubs in the lawn (potentially serious)

We are getting to the time of year when homeowners start thinking about grubs (whether or not that actually have them). It is worthwhile to review the problem as it seems like there is always some wrong information floating around out there. White grubs are the larvae of several beetles including Japanese beetles, chafers and June beetles. While eggs of these species will hatch into grubs at various times in late summer, most of the damage begins around early August. The grubs will continue to feed on turf roots until the weather gets cold. Then they will go deeper into the soil to spend the winter. When spring returns, the grubs will come back to the surface, but they are older and tougher and insecticides are less successful.

How do you know if your lawn needs grub control? Grubs eat grass roots, and this will lead to brown areas in the lawn. Unfortunately, other causes can lead to a brown lawn. We have had a lot of hot, dry weather, and that can cause lawns to turn brown. We are also seeing some fungal diseases in lawns that can lead to browning. If your lawn has grubs, you will be able to pull the lawn up like a carpet since the roots are gone. Homeowners who are irrigating the lawn should be watchful. The beetles have to bury their eggs in the soil. They are more likely to do this in soils that are moist and easy to dig. So, those of you who are watering may be more likely to deal with grubs this year.

Is grub control a good idea for everyone? Not necessarily. If your lawn has never had grubs before and you are not irrigating, it would be best to skip the grub control. Usually control is not warranted unless 10-12 grubs are present per square foot.

If you plan to manage grubs with insecticides, know that the timing of application depends on the product selected. There are now many insecticides available to treat grubs, and they have different application times. Traditional insecticides, like trichlorfon and carbaryl, are applied to the lawn when young grubs are active (August and September). Imidacloprid can be applied once in mid-July in areas where adult beetles were numerous. Another product, known as chlorantraniliprole, is applied in spring to kill new grubs that hatch out in late July. It will not kill

grubs present in spring. Usually one treatment of any of these is adequate when followed up with good turf management. (Insecticide information from University of Illinois and Michigan State University). The bottom line is to read the product label carefully to see which ingredient the product contains and exactly when it should be used. Timing is important. Most of these products need to be watered in to be effective. Check the label for this information as well.

We receive a lot of questions about the use of the biological control milky spore disease. This is a bacterium that is specifically toxic to the grub stage of the Japanese beetle and is applied to the soil. This is a slow method at best in the warmer southern states (may take 3-5 years to build up in soil enough to be effective) and is often not very effective in colder, northern states. Also, if you have grubs that come from another type of beetle, it won't work on them at all.

Good website:

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

Zimmerman pine moth (serious)

It is also time to start thinking about Zimmerman pine moth (*Dioryctria zimmermani*). Mid-August is a good time to treat for this pest. Larvae damage trees by tunneling just beneath the bark of the trunk and branches. The tunnels can girdle and weaken the trunk or branches so they are easily broken by wind or snow. Heavily infested trees are often deformed and are sometimes killed. Common hosts include Austrian, Scots, and ponderosa pines.



Figure 2 Pitch masses due to Zimmerman pine moth

Larvae overwinter in cocoon-like structures under bark scales. They become active in the spring and tunnel into the bark and sometimes the terminals. In late spring, they migrate to the base of branches, tunneling into the whorl area where pitch masses (fig. 2) exude from the wound site. The larvae continue to feed, pupate within the pitch mass, and emerge as adults in August. After mating, female moths lay eggs, often near wounds or previous pitch masses. Eggs hatch in about a week, and the larvae feed for only a brief time before preparing to overwinter.

Management: Damaged wood should be pruned out as soon as dieback and pitch masses are seen. Larvae can be controlled by spraying bark and foliage with insecticides in mid-August; GDD 1900-2150 (this GDD derived from several universities, not "Coincide"). Michigan

State indicates that adult flight may occur as early as 1700 GDD (which is now for some areas). Trees can also be treated when saucer magnolia is in pink bud to early bloom (100-200 GDD).

Galls, Chapter 4

It is turning out to be a busy year for galls. We are featuring a nice selection of them for you this week. We write about these just so you know what you are looking at. Most galls are very minor and we don't need to treat for them.

Our native buttonbush (*Cephalanthus occidentalis*) is showing a weird gall that we have seen in previous years. Buttonbush galls, caused by a mite, are small, bumpy galls (fig. 3). They sometimes show up in large numbers, giving the whole shrub an unattractive look.



Figure 3 Galls on buttonbush

Some other galls showing up now are regulars. We have two galls showing up on goldenrod. They are the goldenrod fly gall and the goldenrod bunch gall. The goldenrod fly gall (*Eurosta solidaginis*) shows up as those interesting ball shapes in the goldenrod stem. The gall maker lives inside that round gall and will pupate there in spring. The goldenrod bunch gall is caused by a midge (*Rhopalomyia solidaginis*). The larva of this midge secretes a chemical that stops the goldenrod stem from growing any taller. The leaves keep forming, though. This leads to a bunch of shortened leaves (fig. 4) at the end of the stem. Actually, very pretty!



Figure 4 Goldenrod bunch gall

Pest Updates: Disease

Bur oak blight (potentially serious)

This disease is caused by the fungal pathogen *Tubakia iowensis*. There are other species of *Tubakia* that cause less serious fungal diseases. BOB infects bur oak (*Quercus macrocarpa*), and recent research by Iowa State shows that swamp white oak (*Quercus bicolor*) may be infected, although this is rare.

We have not had any calls about this disease yet, but this is the time to be looking for symptoms. The first symptoms are purplish spots on the veins on the lower side of the leaves.

The spots then spread and develop into purple coloration along the veins on both the lower and upper side of the leaves (fig. 5). In August and September, symptoms will worsen, with veins dying and the infection moving to the end of the leaf, leading to a wedge-shaped dead area. While there may be some defoliation, some infected leaves will remain on the tree, and the fungal spores will overwinter in pustules (fig. 6) located on the petioles of these infected leaves (the main part of the leaf may fall, but the petiole often remains attached to the tree). The presence of these pustules is considered a requirement for the confirmation of BOB. New spores will be released in spring. Repeated years of defoliation may predispose the tree to other problems, such as Armillaria root rot and two-lined chestnut borer. Often, these secondary problems contribute to the death of a tree as much as BOB itself.



Figure 5 Purple discoloration of veins

Management: First, confirm that the tree actually has bur oak blight. Get a sample tested at the University of Illinois Plant Clinic (<http://web.extension.illinois.edu/plantclinic/>). Keep trees vigorous through proper watering and pruning (during dormant season). Iowa State and University of Minnesota are indicating that injections of propiconazole in spring may be useful in slowing the disease. Injections must be done by a licensed professional. Raking fallen leaves does not help manage this disease because the petioles that remain on the tree are a source of infection.



Figure 6 Black pustules on leaf stalk

Good websites:

<http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-diseases/bur-oak-blight>
<http://hyg.ipm.illinois.edu/article.php?id=752>

Rust on lawns (minor)

It is strange that we are most of the way through July and no one has reported rust on their lawn. Someone out there has orange shoes and is not telling me! This disease generally shows up in July and August when the grass slows its growth due to heat and dryness. The slow growth of the turf allows the disease to attack the grass. Lawn rust is caused by a *Puccinia* sp. All turfgrasses can be infected by many different

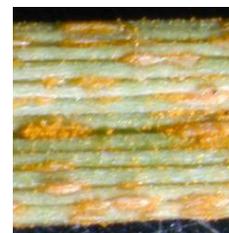


Figure 7 Rust on a blade of grass

species of rust fungi, and Kentucky bluegrass is one of the more rust-susceptible grass species.

Initial symptoms of rust disease include yellow lesions on grass blades (fig. 7) that enlarge over time and rupture to release orange spores. When you walk across the lawn, your shoes pick up the orange spores and turn orange (fig. 8). The spores are wind-blown and splashed by rain to new infection sites on grass.



Figure 8 Shoes covered with orange rust spores

Management: There is no permanent shoe damage, and the orange spores can be easily wiped off. Lawn rust is usually not severe enough to warrant use of fungicides, and sound management practices will keep this disease in check. Management practices that spur a little growth will minimize rust. These practices include watering and fertilizing with nitrogen. While these practices may apply to a highly managed lawn, they may not be great for the average home lawn. Watering the lawn in summer is not really a priority since the lawn can go dormant and come back when the rain and cooler temperatures return. Fertilizer may be harmful to an unwatered lawn. When the rain returns and the grass grows again, the rust usually diminishes. Some management techniques that apply to any lawn include mowing at the height recommended for the particular turf species and using rust resistant varieties or blends of turfgrass when starting new lawns. For the most part, lawn rust is a relatively minor disease that we can live with.

Good website: <http://ipm.illinois.edu/diseases/series400/rpd412/>

***Guignardia* on buckeye (minor)**

This is coming surprisingly late in the season, but we are finally hearing about *Guignardia* leaf blotch (*Guignardia aesculi*) on buckeye. The disease causes reddish brown to brown lesions with a yellow border that blends into the normal green leaf tissue (fig. 9). The blotches will enlarge, coalesce, and may cover the entire leaf by the end of summer. Premature defoliation may follow on the most susceptible hosts. This disease eventually decreases a tree's ability to photosynthesize, but generally the disease doesn't become severe until the tree's annual growth has slowed or is complete. Therefore, it does not do much harm to trees in the landscape, but it does make them unsightly.



Figure 9 *Guignardia* symptoms on buckeye

Management: Removing fallen leaves may help to destroy the overwintering inoculum. Pruning trees to improve air flow may also help, since the spores are spread and germinate under moist to wet conditions. It is too late for any fungicide treatments.

Good website: <https://extension.umaine.edu/ipm/ipddl/publications/5094e/>



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The Plant Health Care Report is prepared by Sharon Yiesla, M.S., Plant Knowledge Specialist and edited by 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 the volunteers who will be scouting for us this season. They find most of the insects and diseases reported here. The Scouting Volunteers include: Maggie Burnitz, LeeAnn Cospier, Ingrid Giles, Loraine Miranda, and Emma Visee. Your hard work is appreciated. Thanks also to many of the Plant Clinic volunteers for sharing things they find in their own yards and neighborhoods.

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

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