

Plant Health Care Report

Scouting Report of The Morton Arboretum

July 12, 2019

Issue 2019.8

Comments or concerns regarding PHCR should be sent to syiesla@mortonarb.org.

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. Arboretum staff and volunteers will be scouting for insects and diseases throughout the season. We will also be including information about other pest and disease problems based on samples brought into The Arboretum's Plant Clinic.

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, please contact me at syiesla@mortonarb.org

Quick View

What indicator plant is in bloom at the Arboretum?

Panicked hydrangea (*Hydrangea paniculata*) is in full flower (Figure 1)

Accumulated Growing Degree Days (Base 50): 1152 (as of July 11)

Accumulated Growing Degree Days (Base 30): 3329 (as of July 11)

Diseases

- *Phytophthora ramorum*, sudden oak death and ramorum blight
- Powdery mildew
- Walnut anthracnose
- Slime mold, stink horns and mushrooms

Insects/other pests

- Japanese beetles and white grubs
- Head-clipping weevils
- Two-marked tree hoppers
- Viburnum leaf beetle update



Figure 1 Panicked hydrangea (photo: J. Hagstrom)

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. To show that this happens elsewhere, we are comparing the GDD in Glencoe to those at the Botanic Garden (which is in Glencoe) and showing the differences at two locations in Waukegan.

As of July 11, we have 1152 base-50 growing degree days (GDD). The historical average (1937-2018) for this date is 1234 GDD₅₀. Since January 1, we have had 29.77 inches of precipitation. Historical average (1937-2018) for precipitation Jan-July is 24.67 inches.

| Location | B ₅₀ Growing Degree Days Through July 11, 2019 | Precipitation (in) July 5-11, 2019 |
|--------------------------|---|------------------------------------|
| Carbondale, IL* | 1938 | |
| Champaign, IL* | 1607 | |
| Chicago Botanic Garden** | No report | |
| Glencoe* | 730 | |
| Chicago O'Hare* | 1257 | |
| Kankakee, IL* | 1370 | |
| Lisle, IL* | 1301 | |
| The Morton Arboretum | 1152 | |
| Quincy, IL* | 1659 | |
| Rockford, IL* | 1172 | |
| Springfield, IL* | 1652 | |
| Waukegan, IL* (60087) | 991 | |
| Waukegan, IL* (60085) | 1068 | |

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

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: Diseases

***Phytophthora ramorum*, sudden oak death and ramorum blight (serious)**

This week, we'll start with diseases, since we have a potentially serious situation occurring. The disease pathogen *Phytophthora ramorum* has been found on rhododendrons and lilacs that were sold at certain stores this year in Illinois. The Illinois Department of Agriculture issued a press release last week (see first link below) about the affected plants and the stores through which they were sold. This pathogen causes a blight, known as ramorum blight, on rhododendrons, azaleas, viburnum and lilacs, as well as other plants (see second link below). Symptoms include leaf discoloration and branch dieback. This blight is generally not fatal to these plants, but they can be carriers of the pathogen. When this pathogen infects oaks, they contract a disease called sudden oak death, which can be fatal. At this time, no oaks in Illinois are known to be infected.

P. ramorum is soil-borne and water-borne and can be spread by infected plant material, soil and in water. The University of Illinois Plant Clinic has released more complete information on this disease (see the third link below). Ask the following questions if a plant appears suspect:

- Was the plant purchased in 2019?
- Is the plant a lilac, rhododendron, or azalea?
- Is the plant displaying any of the following symptoms:
 - Dark brown spots, blotches, or tip dieback on leaves
 - Dark brown discoloration along the leaf margins
 - Dark brown discoloration of the branches, usually starting at branch tip

If the answers to all of the above questions is YES, please contact the Illinois Department of Agriculture at (815) 787-5476.

Here are some important points to remember:

- Sudden Oak Death has NOT been found in Illinois at this time
- Plants purchased prior to 2019 are unlikely to be infected
- Plants that are suspected of having this disease should NOT be moved or destroyed. The Illinois Department of Agriculture needs to be contacted.
- Do NOT submit samples to any public garden, plant clinic, park district or U of I Extension office. Contact the Illinois Department of Agriculture. They are the organization that handles this problem.

Good websites:

<https://www2.illinois.gov/Pages/news-item.aspx?ReleaseID=20290>

<http://www.suddenoakdeath.org/diagnosis-and-management/hosts-and-symptoms>

<https://uofi.app.box.com/v/Pramorumalert>

Powdery mildew (minor)

Powdery mildew is starting to show up on a few plants, most likely due to the higher levels of humidity we have been having lately. Hundreds of plant species are susceptible to powdery mildew, but the disease is caused by many different species of fungi which are host specific. This means that the powdery mildew on coralberry will not infect lilacs and so forth.



Figure 2 Powdery mildew

Powdery mildew appears as a superficial white to gray coating (fig. 2) over leaf surfaces, stems, flowers, or fruits of affected plants. Initially, circular powdery white spots appear. These spots coalesce producing a continuous patch of “mildew.” Later in the season, small, black fruiting bodies will appear. Warm days and cool nights favor this fungal disease. The fungi that cause powdery mildew are deterred by water on the leaves, since spores will not germinate in water on leaves. However, the fungus still needs high humidity to infect the plant. Leaf curling and twisting result, and in severe infestations you may see premature defoliation and deformed flower buds. Although unsightly, powdery mildew is usually not fatal in the landscape.



Figure 3 Powdery mildew on ninebark

We have seen powdery mildew more extensively on ninebark (fig. 3). On that plant, the tips of branches often develop a thick coating of white powder, while other parts of the same plant may show very few symptoms. The straight species of ninebark is relatively resistant to powdery mildew, but some of the cultivars can be very susceptible and can sustain quite a bit of damage. University of Connecticut has done some research on this. Go to

[http://www.academia.edu/14492054/Susceptibility_of_eastern_ninebark_Physocarpus_opulifolius L. Maxim. cultivars to powdery mildew](http://www.academia.edu/14492054/Susceptibility_of_eastern_ninebark_Physocarpus_opulifolius_L._Maxim._cultivars_to_powdery_mildew) to see their findings.

Management: Infected plant parts should be removed as soon as symptoms appear. Dispose of fallen leaves, and do not handle plants when foliage is wet. Water plants during periods of drought to keep them healthy. High humidity can increase disease severity, so avoid overhead watering in late afternoon or evening. Put plants in locations where there is good soil drainage and sufficient sunlight. Provide proper plant spacing for good air circulation. Powdery

mildew on some plants can result in significant damage, and fungicides may be needed. To obtain optimum results, spray programs should begin as soon as mildew is detected. In the future, plant mildew-resistant cultivars and species.

Good websites:

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

Walnut anthracnose (minor)

We are seeing the first symptoms of walnut anthracnose. Symptoms are small leaf spots with pale centers and dark-brown margins. The spots are somewhat circular and first appear on the underside of leaves, eventually becoming apparent from both sides (fig. 4). They range in size from pinpoints to about 1/4 inch in diameter. When numerous, they cause leaf yellowing, curling, and margin browning. In addition, sunken necrotic (dead) spots develop on the husks of infected nuts.



Figure 4 Walnut anthracnose

Infection of immature nuts may result in their premature drop. Walnut anthracnose may cause leaf yellowing and premature defoliation and diminish nut quality, but is not considered a major problem in ornamental walnuts.

Management: Gather and destroy fallen leaves to reduce inoculum. Reduce tree stress by watering during periods of drought and through proper fertilization in fall.

Good websites:

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

Slime mold, stink horns and mushrooms (minor)

What is that stuff on my mulch? Every time we have a really wet year, this becomes a popular question. Excess rain leads to a variety of strange looking growths in the garden. Wet weather promotes the growth of a variety of mushrooms and there are any number of different-looking mushrooms. Wet soils lead to decay of organic matter, and these mushrooms are the reproductive structures of the fungi that cause organic matter to



Figure 5 slime mold (dried)

decay. Mushrooms can be easily dug up and discarded.

Another weird growth that shows up in the wet is slime mold, another decay organism. Slime mold, when fresh, comes in nice colors like yellow and pink, and it looks like a puddle, the kind of puddle that makes you wonder if your dog needs to go to the veterinarian. As it dries, some of the color goes away and the puddle becomes a dry crust (fig. 5). When it has dried, slip the blade of your shovel under it and lift it away to the garbage.

A third candidate in the “what is that” category is the stink horn. Stink horns are a type of mushroom, but they merit a mention because they really capture our attention. They come in an interesting array of colors and, guess what, they stink. A common type is reddish orange and sort of looks like carrots growing upside down in the mulch. But they do come in many weird and even vulgar shapes. One thing that intrigues people is that the stink horn grows out of a structure that looks like an egg. Just as with slime mold, we can slip our shovel blade in and lift them away to the garbage.

Pest Updates: Insects

Japanese beetles and white grubs (Potentially serious)

That special time of year has arrived. It’s Japanese beetle time. We have already had a couple of reports of Japanese beetles (*Popillia japonica*). Japanese beetles are up to 1/2 inch long, and have oval, metallic green bodies with coppery brown wing covers (fig. 6). They appear to have five white spots along each side and two additional white spots behind their wing covers. Upon examination under a hand lens, the spots are actually tufts of hair.



Figure 6 Japanese beetle adult

Adult beetles feed on nearly 300 different species of ornamental plants with about 50 species being preferred. Highly preferred hosts include rose, crabapple, cherry, grape, and linden. The adults feed on leaf tissue between veins, resulting in skeletonized leaves (fig.7). Severely infested plants may be almost completely defoliated. Early infestations of Japanese beetle may be missed since the insects start feeding in the tops of trees.

Japanese beetles overwinter as larvae (grubs) about four to eight inches beneath the soil surface. In spring, as the soil temperatures warm to about 55° F, the grubs move upward through the soil to pupate. Adults normally emerge from late June through July. Within a few days after emergence, the females mate and burrow into the soil to lay eggs. Nearly all eggs

are laid by mid-August. In sufficiently warm and moist soil, eggs will hatch in about ten days. Grubs feed on plant roots until cold weather forces them to greater depths in the soil for the winter. There is one generation of this beetle per year.



Figure 7 Japanese beetle damage

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. 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.

Management: Adult Japanese beetles can be handpicked. It is easiest to catch them by placing a soapy-water filled container directly under the leaf that they are chewing on and then shaking the leaf. The soapy water ensures that the beetles die while you're collecting them. The beetles generally fly straight down into the collecting container. Sometimes Japanese beetle pheromone traps are used to trap them. We don't recommend these, as they will attract even more beetles to your property (more than the trap can collect). Insecticides can be used in the case of valuable plants. A soil drench of imidacloprid in spring is sometimes recommended for control of Japanese beetles. **It should be noted that newer imidacloprid labels indicate that this product can no longer be used on lindens (*Tilia* species).**

Managing the Japanese beetle grubs that will hatch out around late July may help to reduce populations of adult beetles for next year. Eggs and first instar larvae require moisture to survive; therefore, the easiest way to reduce grub populations is to limit lawn irrigation during the egg-laying period when beetle populations peak (mid-July through early August). Japanese beetles also avoid laying eggs in shade, which is another great reason to plant more trees and shrubs. Insecticide applications are effective in controlling young larvae.

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 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. A newer product, chlorantraniliprole, is applied in spring to kill new grubs that hatch out in late July. It will not kill grubs present in spring. (Insecticide information from University of Illinois and Michigan State University). The bottom line is to read the product label carefully and use it at the appropriate time. The information given here is very general. The product label will give specific information.

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 at all in colder, northern states. Also, if you have grubs that come from another type of beetle, it won't work on them at all. This product is really not recommended for our area.

Beneficial nematodes can be watered into turf, again in late July, where they infest and kill grubs. Products containing *Heterorhabditis bacteriophora* nematodes are recommended by the University of Illinois. Beneficial nematodes are not always available in stores; they are available through mail order/internet sources.

Good websites:

<http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-pests/japanese-beetles>

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

Head-clipping weevils (minor)

We are seeing head-clipping weevils (*Haplorhynchites aeneus*) cutting the flower heads off of *Helianthus*. The adult is a dark-colored weevil (a beetle with a snout). The insect is about ¼ inch long, and the snout is long and curved. The female uses her mouthparts, located at the end of the snout, to cut the flower stalk about 1 inch to 1 ½ inches below the flower head. The flower stalk is not cut all the way through, so the flower head dangles on a thin piece of stem tissue (fig. 8). The dangling flower head is used by the adults for mating and egg-laying.



Figure 8 damage caused by the head-clipping weevil

Once the flower head finally breaks off and falls to the ground, the larvae hatch and use the flower head for food.

Mature larvae will move into the soil to overwinter, with pupation occurring in late spring.

Management: Good sanitation is the key in managing this pest. Timely removal of hanging flower heads and recently fallen flower heads will reduce the population for next year

Good websites: <https://bygl.osu.edu/node/1087>

<http://entomology.k-state.edu/extension/insect-information/crop-pests/sunflowers/sunflower-headclipping-weevil.html>

Two-marked tree hoppers (minor)

Two-marked treehopper (*Enchenopa binotata*) adults were found on black walnut (*Juglans nigra*) shoots. Adults are dusky brown with two yellow spots on their backs (thus the name), have high, curved horns that point forward coming out of their midsection, and are less than ½ inch long (fig. 9). The nymphs look quite different from the adults. They're about 1/8 inch long, dark gray to brown, and have spines sticking out of their abdomens. Both stages can, as you may imagine by their name, jump!



Figure 9 Adult two-marked tree hopper

Nymphs and adults suck plant juices, but don't do much damage. The damage appears as pale-yellow stippling on the leaves. Treehoppers do, however, produce honeydew which encourages sooty mold. Female adults can injure twigs by laying eggs in slits made in the bark. Black locust, bittersweet, wafer-ash, redbud, and viburnum are also hosts for this insect.

Management: Control is not necessary.

Good website: <https://bygl.osu.edu/index.php/node/566>

Viburnum leaf beetle update (serious)

Viburnum leaf beetle adults are out and chewing. The beetles are small (1/3 inch) and brown to golden brown (fig.10). They are not easily noticed, but their feeding is. They will pick up where the larvae left off.

Management: Adults can be treated with one of the following insecticides: carbaryl, cyfluthrin, permethrin, resmethrin, malathion or acephate. Insecticidal soap is **not** effective on the adults. Do not spray for the adults until they



Figure 10 Adult viburnum leaf beetle

are present. These insecticides are not preventative.

In fall, look for egg-laying sites. The actual eggs are not visible. The eggs are laid in small holes on the ends of twigs and then the holes are capped. The caps stand out against the bark of the twig, making them easy to see. Cut out the twigs that have the eggs in them, and get them out of the garden completely. This will greatly reduce the number of insects you have next year. If you have a number of shrubs, remember that you have all fall and winter to remove these twigs. Getting them in the egg stage greatly reduces the need to spray next year. We can't stress enough the importance of this technique. This is the most effective management approach and the least toxic to beneficial insects.



Bartlett Tree Experts, Plant Clinic sponsor.

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 to the volunteers who will be scouting for us this season. The Scouting Volunteers include: Maggie Burnitz, LeeAnn Cospers, Ingrid Giles, Loraine Miranda, Mary Noe and Emma Visee. Your hard work is appreciated. Thanks also to Donna Danielson who shares her scouting findings.

Literature/website recommendations:

Indicator plants are chosen because of work done by Donald A. Orton, published in the book Coincide, The Orton System of Pest and Disease Management (<http://www.laborofloveconservatory.com/>)

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

The Commercial Landscape & Turfgrass Pest Management Handbook (CPM), for commercial applicators, and Pest Management for the Home Landscape (HYG) for homeowners from the University of Illinois, are available by calling (800-345-6087).

This report is available as a PDF at The Morton Arboretum website at

<http://www.mortonarb.org/visit-explore/news-events/arboretum-news?tid=259>

For pest and disease questions, please contact the Plant Clinic at (630) 719-2424 between 10:00 and 4:00 Mondays through Saturdays or email plantclinic@mortonarb.org. Inquiries or comments about the PHCR should be directed to Sharon Yiesla at syiesla@mortonarb.org.

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