

# Plant Health Care Report



THE  
CHAMPION  
of TREES

Scouting Report of The Morton Arboretum

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Welcome to the Plant Health Care Report (PHCR). My name is Sharon Yiesla. I am on staff at The Morton Arboretum Plant Clinic, and I will be responsible for compiling the newsletter again this year. Comments or concerns regarding PHCR should be sent to [syiesla@mortonarb.org](mailto: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 to the email list, please contact me at [syiesla@mortonarb.org](mailto:syiesla@mortonarb.org)

## Quick View

### What indicator plant is in bloom at the Arboretum?

Queen Anne's lace (*Daucus carota*) is in flower (fig 1)

**Accumulated Growing Degree Days (Base 50): 1647 (as of July 19)**

**Accumulated Growing Degree Days (Base 30): 3901 (as of July 19)**

### Insects/other pests

- Magnolia scale
- Zimmerman pine moth

### Diseases

- Downy leaf spot on hickory
- Tar spot of maple
- Cytospora update

### Miscellaneous

- Herbicide damage



Figure 1 Queen Anne's lace

## 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 19, we are at 1647 base-50 growing degree days (GDD). The historical average (1937-2016) for this date is 1430 GDD<sub>50</sub>. Since January 1, we have had 24.40 inches of precipitation. Historical average (1937-2016) for precipitation Jan-July is 21.89 inches

Location	B <sub>50</sub> Growing Degree Days Through July 19, 2018
Carbondale, IL*	2354
Champaign, IL*	2051
Chicago Botanic Garden**	1393
Chicago O'Hare*	1698
Kankakee, IL*	1821
Lisle, IL*	1738
The Morton Arboretum	1647
Northbrook, IL**	No report
Quincy, IL*	2251
Rockford, IL*	1604
Springfield, IL*	2184
Waukegan, IL*	1372

\*\*Thank you to Mike Brouillard, Northbrook Park District and 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: Insects/other pests

### **Magnolia scale (potentially serious)**

The Plant Clinic at The Morton Arboretum is getting numerous calls and emails from homeowners with magnolia scale (*Neolecanium cornuparvum*) on their magnolia trees. This is an unusual scale insect because they're so big and easy to see! Magnolia scale has become an ongoing problem in northeastern Illinois. These insects have sucking mouthparts and extract sap from the host plant's branches and twigs. Badly infested branches and twigs are weakened and plant growth is slowed. When infestations are severe, branch dieback can result, and with repeated severe attacks, trees may be killed. As with most soft scale infestations, plant leaves are often covered with sooty mold (fig.2), a black fungus that grows on the honeydew excreted by the scales. Sooty mold cuts down on photosynthesis because it blocks sunlight from the leaf.



Figure 2 Sooty mold growing on honeydew

Initially, magnolia scales are shiny, flesh-colored to pinkish brown, and smooth, but they become covered with a white mealy wax over time (fig. 3). This wax is lost at the time crawlers emerge. Adult females give birth to live young, called crawlers, in late August or early September. Some universities report that the beginning of emergence should start around 1900 to 1950 GDD. We are already at 1647. The crawlers are tiny, flattened, and vary in color from yellow to reddish-brown. The crawlers settle on one- to two-year-old twigs to feed and remain there through the winter.



Figure 3 Adult magnolia scale

**Management:** Before you buy a plant, check it carefully for scale. Beneficial insects, such as lady beetles, are frequently seen gobbling up crawlers. Fall and spring insecticide sprays (such as insecticidal soap and summer oils) to control crawlers are suggested for large populations. Soil drenches of systemic products containing either imidacloprid or dinotefuran can be used in late summer, but will need some time to move through the plant and become effective. It should be noted that adult scale will remain in place even when dead. This often gives the impression that the insecticides did not work. Dead adults will be dry and easy to pick off. Live scale will ooze liquid when crushed.

Good web site: <http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-pests/magnolia-scale-neolecanium-cornuparvum>

### Zimmerman pine moth (serious)

Zimmerman pine moth (*Dioryctria zimmermani*) is being reported in some areas in the Chicago region. 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 4 Pitch masses caused by 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 exude from the wound site (fig. 4). 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 almost here). Trees can also be treated when saucer magnolia is in pink bud to early bloom (100-200 GDD).

Good website: <http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-pests/pine-moths>

### Pest Updates: Diseases

#### Downy leaf spot on hickory (minor)

Downy leaf spot, also known as white mold or white leaf spot, caused by the fungus *Microstroma juglandis*, has been found on hickory (*Carya* sp.).

Powdery, white, fuzzy spots that are more



Figure 5 Downy leaf spot

concentrated near the leaf veins are forming on the underside of the leaf surface (fig. 5). Corresponding chlorotic spots appear on the upper leaf surface. These spots vary in size and may coalesce to form large angular lesions. The fungus may also cause witches' brooms near the ends of branches with stunted and yellowish leaves that may drop in early summer.

**Management:** Downy leaf spot attacks hickories and walnuts but is not a significant threat to the trees. Witches' brooms can be pruned to improve the appearance of the tree. Chemical management is not recommended.

### **Tar spot of maple (minor)**

Tar spot of maple is showing up on silver maple (*Acer saccharinum*). In the early stage, the spots are yellowish with black specks in them that may go unnoticed. As the disease develops, the spots will look just like shiny black spots of tar flung about on the upper surface of maple leaves (we are seeing this stage now). Several different fungi in the genus *Rhytisma* infect the leaves of maples and cause the spots. The spots range from 1/5 to 4/5 inch in diameter (fig. 6). In some cases, a red ring surrounds the spot. *Rhytisma* spp. most commonly infect leaves of silver and Norway maples, although red and sugar maples are also susceptible. It does little harm to the trees, but is unsightly.



Figure 6 Tar spot

**Management:** Fungicides generally are not necessary. To reduce inoculum, rake up and discard the leaves in fall.

Good website:

<http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-diseases/tar-spot-maple-rhytisma-spp>

### ***Cytospora* update**

*Cytospora* canker continues to be a major disease on spruces, especially Colorado blue spruce, this year. We wrote about this disease in issue 4 this season, but it bears repeating because it is so widespread. Why is it so bad this year? *Cytospora* is a stress-related disease and it rarely affects trees that are younger than 15 to 20 years old. Young trees have not been in the landscape as long as older trees. Older trees have been subjected to more stress. We have had several years in a row, where environmental stress was high (drought in 2012, flooding in 2013,

two very brutal winters, three or four years of wet springs and dry summers, and temperatures all over the spectrum).

The disease symptoms usually start 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 often 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 disinfect pruning tools between cuts. Give spruces adequate space when planting as dense planting is another common predisposing stress factor. If it is necessary to replace 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>

## **Miscellaneous**

### **Herbicide damage**

We have seen a number of plants this year that appear to be damaged by herbicides like 2, 4-D and dicamba. These are commonly found in a number of products, especially those for broadleaf weed control in lawns. These herbicides are growth regulators, and damage from them often shows up as distorted growth (fig.7). These chemicals have the potential to volatilize into the air and be carried on the wind to off-target species. This spring and early summer provided us with many windy days where this type of drift could occur. Also very hot temperatures can increase volatilization. We have experienced some very hot days this summer.

Luckily, most landscape plants will outgrow the damage from herbicide drift as long as they were not sprayed directly.



Figure 7 Herbicide damage on redbud

The bottom line is to read the label directions and follow them carefully. Not only can dicamba do damage if it volatilizes and drifts, it can also enter the root systems of trees and shrubs if the product is applied in the root zone. Products that contain dicamba have a special warning on the label regarding use around trees and shrubs. If you are using these products, read the label carefully to see what active ingredient is in the product. When hiring landscapers and lawn care companies to treat lawns, ask what product they use and ask also if it contains dicamba.

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***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 Fredric Miller, Ph.D., Research Entomologist at The Morton Arboretum and Professor at Joliet Junior College and Carol Belshaw, Arboretum Volunteer. Frank Balestri M.S., Plant Health Care Technician/Research Assistant is responsible for coordinating the scouts. 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 Cosper, Ingrid Giles, Pat Miller, Loraine Miranda, and Mary Noe . 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, which is published in the book *Coincide, The Orton System of Pest and Disease Management*. This book may be purchased through the publisher at: <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://www.ipm.msu.edu/agriculture/christmas_trees/gdd_of_landscape_insects)

[http://extension.unh.edu/resources/files/Resource000986\\_Rep2328.pdf](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](mailto:plantclinic@mortonarb.org) . Inquiries or comments about the PHCR should be directed to Sharon Yiesla at [syiesla@mortonarb.org](mailto:syiesla@mortonarb.org) .

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