Plant Health Care Report

Scouting Report of The Morton Arboretum

The Morton Arboretum

April 17, 2015 **Issue 2015.2**

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.

New this year: We are moving to an every other week schedule this year. Our focus will be on pests that are more serious. Some minor pests will still be covered, but in shorter articles. Should we encounter some new major pest, we will issue an alert. If this occurs during a week when we are not publishing the newsletter, our regular readers will receive a timely email alert, and the information will be published in the next scheduled newsletter. On weeks when we do not publish a full newsletter, we will still make growing degree day information available since many of our readers use this information. Readers who received our email blasts in the past will continue to receive one weekly, either to announce that the newsletter is available or, on alternate weeks, that the growing degree day information is available. To be added to the email list, please contact me at syiesla@mortonarb.org

Quick View

What indicator plant is in bloom at the Arboretum?
Cornus mas (Cornelian-cherry dogwood) continues to flower
and *Cercis canadensis* (Redbud, figure 1) buds are just beginning to show color

Accumulated Growing Degree Days (Base 50): 31 (as of April 16)
Accumulated Growing Degree Days (Base 30): 524.5 (as of April 16)

Insects and insect relatives

- **Larch casebearer**
- **Ticks**
- **Eastern tent caterpillar**

Diseases

- **Cedar apple and cedar hawthorn rust**
- **Black knot**

Weeds

- **Ficaria verna, a weed of many names**

Miscellaneous

- **Timing of fungicides**
- **Lawn care update**
- **Lichens**

Figure 1 Cercis canadensis

Oak and Elm Pruning Advisory
Update on elm bark beetle emergence

It is time to stop pruning oaks and elms! Two elm bark beetles have shown up in our trap, so activity of these insects is starting. Pathologists differ in their opinions on when to resume pruning. To err on the side of safety don't prune oaks and elms between April 15 and October 15, when the beetles are active.

Degree Days and Weather Information

As of April 16, we are at 31 base-50 growing degree days (GDD). The historical average (1937-2013) for this date is 2 GDD_{50}.

Location	B_{50} Growing Degree Days Through April 16, 2015	Precipitation (in) April 10-16, 2015
Carbondale, IL*	233	
Champaign, IL*	143	
Chicago Botanic Garden**	33.5 (as of 4/15)	2.1 in (4/9-15)
Chicago O'Hare*	79	
Kankakee, IL*	95	
The Morton Arboretum	31	.94 inches
Northbrook, IL**	40	2.21 in (4/9-15)
Quincy, IL*	183	
Rockford, IL*	51	
Springfield, IL*	176	
Waukegan, IL*	40	

**Thank you to Mike Brouillard, Northbrook Park District and Chris Beiser, 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 and insect relatives

Larch casebearer (minor)

Larch casebearer (*Coleophora laricella*) was found by our scouts recently. The larvae hollow out needles, causing them to first wilt and then bleach to a light off-yellow color. The needles will soon turn reddish-brown and drop prematurely within a few weeks.

Figure 2 Larch casebearer larva

The caterpillars of this species are very small and overwinter as larvae within tiny tan-colored cases made of hollowed out needles lined with silk (Fig. 2). Larvae emerge and begin feeding in early spring as needle growth begins. They feed for several weeks, pupate on the twigs, and emerge as adult moths in late May and early June. The adults lay eggs on needles and, in a few weeks, eggs hatch (late June and July) and larvae begin to mine inside the needles. Larvae mine the needles for about two months before making their cases from hollowed-out needles. These cases will be carried around on their backs (like a backpack) for the remainder of their larval period.

Management: Unlike most other conifers, larches can develop a second set of leaves. However, repeated defoliation can weaken trees and make them more susceptible to attack by other insects and pathogens. There are various natural controls, such as weather, predators and parasites, and needle diseases that usually keep populations in check. For severe or repeated infestations, insecticides may be needed.

Good websites:
http://extension.umass.edu/landscape/fact-sheets/larch-casebearer
http://na.fs.fed.us/spfo/pubs/fidls/larch/larch.htm

Ticks (potentially serious – vector of disease)

Although it seems like the season is just getting started, we have already had a report of a dog tick being found. This is of concern for both gardeners and professionals who spend a lot of time outdoors. Some ticks are able to spread disease so we want to protect ourselves from them. The University of Rhode Island has a great site that provides information on everything regarding ticks, from preventing contact, to removing, to identifying. See the link below for more:

http://www.tickencounter.org/

Eastern tent caterpillar (potentially serious)

Dr. Frederic Miller reports to us that he has seen the very early 1st instar of Eastern tent caterpillar (*Malacosoma americanum*) on cherry and plum trees in Joliet. The caterpillars (Fig. 3) ultimately grow to two inches long and are hairy with white stripes down their backs and blue spots between longitudinal yellow lines (they are beautiful caterpillars). The larvae gather at a fork in a tree and build a web or "tent". They leave the web to feed during the day, but return at night. Severe defoliation only occurs when populations are high.

Figure 3 Eastern tent caterpillar

Eastern tent caterpillars prefer trees in the rose family, such as wild black cherry, apple and crabapple, plum, and peach, but occasionally will feed on ash, birch, willow, maple, oak, and poplar.

Management: The safest way to control the caterpillar is pruning out the webs. This should be done on cloudy or rainy days or at night when the caterpillars are in the nest and not out feeding.

Good web site:
http://www.mortonarb.org/trees-plants/plant-clinic/help-pests/tent-or-web-making-caterpillars

Pest Updates: Diseases

Cedar-apple and cedar-hawthorn rust (potentially serious, but not life-threatening)

Cedar rust galls on juniper are beginning to produce their telial horns (Fig. 4). Our scouts report that the telial horns have elongated to about 1/8 inch. How quickly these expand will depend quite a bit on the amount of rainfall we get (fungi need water). Crabapples and hawthorns will be expanding their new leaves soon (or may already be doing so in more southern parts of our region). These new leaves will be susceptible to infection when the telial horns expand fully and release their spores. The treatment time is at hand (see "Timing of fungicides" article below)

Figure 4 Expanding telial horns

There are three main rusts on juniper: cedar-apple, cedar-hawthorn, and cedar-quince. Cedar-apple rust and cedar-hawthorn rust both form golf ball-shaped "galls" on junipers. During spring rains, the gelatinous telial horns expand from the golf ball-like galls (Fig. 5). Spores are released from the galls and are blown to a host in the Rose family, e.g., apples, crabapples, and hawthorns. Orange leaf spots subsequently develop on the Rose family plants during the summer.

Cedar-quince rust can cause the most damage by infecting fruits and twigs on trees in the Rose family, especially hawthorns. Although cedar-quince rust spends part of its life cycle on junipers similar to cedar-apple rust and cedar-hawthorn rust, it does not form galls on the junipers. Cedar-quince rust

appears as spindle-shaped swellings on twigs and branches of junipers (Fig. 6). These swellings may be difficult to see at first. In spring, the swellings turn orange and release spores.

Figure 5 Fully expanded telial horns

Management: The disease is usually not serious on the juniper host. Management is usually based on the hosts in the Rose family. The best management is to plant resistant varieties of crabapples and hawthorns. Remember, resistance is not the same thing as immunity. Being resistant does not mean that the tree will never get rust. It only means that, in an average year, it is not likely to have much problem with the disease. In a year that is very favorable to the fungus, even resistant trees may show some signs of disease. When considering the purchase of a new crabapple, check with your local nursery about which rust-resistant cultivars they offer. Chemical control for rosaceous hosts, if used, needs to start as leaves are emerging and when the telial horns are expanding on junipers (now!).

Good web site:

http://www.mortonarb.org/trees-plants/plant-clinic/help-diseases/cedar-apple-rust

Figure 6 Cedar-quince rust on juniper

Black knot (potentially serious)

Black knot (*Dibotryon morbosum*) is a serious and widespread problem of trees in the genus *Prunus*, especially plum and cherry trees. The Plant Clinic at The Morton Arboretum receives questions on this problem year round since it is so prevalent and so easy to spot. Now is the time to look for new abnormal swellings on branches of cherry, peach, plum and related trees. The fungus overwinters in the hard, brittle, rough, black "knots" on twigs and branches of infected trees such as wild black cherries in the woods. These knots may be small or may be several inches long and wrap around the branch. In some instances the main trunk of the tree can become infected.

Figure 7 Black knot, older infection on left, newer infection on right

In the spring, the fungus produces spores within tiny fruiting bodies on the surface of these knots. The spores are ejected into the air after rainy periods and infect succulent green twigs of the current season's growth. The newly infected twigs and branches swell. The extensive overgrowth of bark and wood is a response to hormones and produces the smaller swellings that we are now seeing (Fig. 7). Frequently these swelling are not noticed the first year. The swellings become dormant in winter. But the following spring, velvety, green fungal growth will appear on the swelling. The swellings darken and

elongate during summer and, by fall, turn hard, brittle, rough and black. The black knots enlarge and can girdle the twig or branch, eventually killing it.

Management: This is a difficult disease to manage. Prune and discard all infected wood during late winter or early spring before growth starts and when new swellings appear. Pruning cuts should be made at least four to eight inches below any swellings or knots. In advanced cases with many knots, pruning out branches may not be feasible as it may destroy the shape of the tree.

Fungicides offer some protection against black knot, but are ineffective if pruning and sanitation are ignored. If used, fungicides should be applied after dormant pruning.

Good web site:
http://www.mortonarb.org/trees-plants/plant-clinic/help-diseases/black-knot-ornamental-cherry-and-plum

Pest Updates: Weeds

Ficaria verna, a weed of many names (aggressive)

It can be hard to keep track of a plant when it has many names. One such plant is *Ficaria verna*. It was once classified as *Ranunculus ficaria.* Common names for this plant are plentiful too. It has been called fig buttercup, lesser celandine and pilewort. Some of those names almost sound friendly, but this is not a plant to invite into your yard. It is an aggressive grower and is considered invasive in a couple of states on the east coast.

Figure 8 Ficaria verna (photo credit: Sharon Yiesla)

Every year The Morton Arboretum Plant Clinic gets 2 or 3 reports of this plant in northern Illinois. We have already received 2 reports in 2015. This low growing, spring-blooming, plant is very pretty (Fig. 8) but can be quite a spreader, so be watching for it in your area.

Management: The best control is to spray it with an herbicide containing glyphosate. This works best in early spring when the plant is in active growth. Glyphosate will kill anything green so do not get it on any desirable plants. The foliage of this plant may die back in early summer so treat now. It may take more than one year to get rid of it since there is such a short time to treat.

Good websites:
http://www.nps.gov/Plants/alien/fact/rafi1.htm
http://www.newinvaders.org/species/fig%20buttercup.pdf

Miscellaneous:

Timing of fungicides

By the time we write an article on a disease for the Plant Health Care Report, the time to treat has sometimes passed. In the interest of being proactive, let's talk about fungicide applications. Many fungicides are applied as protectants to keep fungi from penetrating into plant tissue. Often this application process needs to start at the time new foliage is emerging and may require 2 to 3 additional applications as the leaves continue to emerge. Already we are seeing some leaf buds opening and, with temperatures continuing in the 60s for highs, leaves will continue to open at a brisk pace. So if there are susceptible trees that you treat for common diseases every year, the time to act is here.

Lawn care update

In the last issue we mentioned some problems showing up in lawns, snow mold fungus and trails left by voles. The lawns have begun new growth and are starting to recover from these two problems with no treatment. Some lawns are showing stubborn brown patches of snow mold damage among the new green grass. These areas may just need a little raking to remove any brown, matted grass and allow the new grass to come in.

We also discussed crabgrass preventer in the last issue. At that time it was a little too early to apply crabgrass preventers. Crabgrass seed will not germinate until soil temperatures are 55 degrees at the one inch level. The Illinois State Water Survey reports that on some days the soil temperature at the two inch depth (at St. Charles reporting station) has been recorded at above 55 degrees, although the temperature has been fluctuating from day to day. The soil temperature at one inch is likely to be slightly higher, suggesting that the time to apply crabgrass preventer is now as germination is likely in the very early stages. The website www.gddtracker.net shows conditions are right for the start of germination in Central Illinois.

Lichens

A call that comes into the The Morton Arboretum Plant Clinic all year round regards strange growths on tree branches and trunks. In most case these have turned out to be lichens (Fig. 9), rather than fungi. Lichens are often flat and scaly and come in many colors (gray, white, blue-green, blue-gray). Lichens are the result of a relationship between a fungus and an alga or cyanobacterium. These

Figure 9 Lichens

organisms will not harm the tree but they can be an indicator that something is not well for your plant. Lichens grow best on plants that have slow growth (it's hard to get established on a stem that is actively growing), so if anything is negatively impacting the growth of your tree or shrubs, the lichens will find it easy to settle in. Don't worry about the lichens. Instead, try to figure out if your tree or shrub is growing too slowly and, if so, why.

Bartlett Tree Experts, Presenting Sponsor of the Plant Clinic.

The Plant Health Care Report is prepared by Sharon Yiesla, M.S., Plant Clinic Assistant and edited by Stephanie Adams, M.S. Research Specialist in Plant Heath Care; Fredric Miller, Ph.D., Research Entomologist at The Morton Arboretum and Professor at Joliet Junior College; Doris Taylor, Plant Information Specialist, 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: LeeAnn Cosper, Paul Duke, Deborah Finch-Murphy, Anne Finn, Ann Klingele, Loraine Miranda, and Bill Sheahan . Your hard work is appreciated.

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.laboroflove conservatory.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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