

Plant Health Care Report

Scouting Report of The Morton Arboretum



May 1, 2015

Issue 2015.3

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 On weeks when we do not publish a full newsletter, we will still make growing degree day information available since many of our readers use this information.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?

Serviceberry (*Amelanchier* species) are in full bloom.

Flowering quince (*Chaenomeles* species) is in bloom (figure 1)

Accumulated Growing Degree Days (Base 50): 68 (as of April 30)

Accumulated Growing Degree Days (Base 30): 782 (as of April 30)

Insects and insect relatives

- European elm flea weevil
- Spruce spider mite
- Woolly alder aphid
- Boxwood spider mite

Diseases

- Wetwood and slime flux
- Cankers
- Volutella blight on pachysandra
- Cedar-rust update

Miscellaneous

- Replacing ash trees



Figure 1 Flowering quince

Degree Days and Weather Information

As of April 30, we are at 68 base-50 growing degree days (GDD). The historical average (1937-2013) for this date is 46 GDD₅₀.

Location	B ₅₀ Growing Degree Days Through April 30, 2015	Precipitation (in) April 24-30, 2015
Carbondale, IL*	333	
Champaign, IL*	192	
Chicago Botanic Garden**	45 (as of 4/29)	.18 in (4/23-29)
Chicago O'Hare*	112	
Kankakee, IL*	135	
The Morton Arboretum	68	.66 inch
Northbrook, IL**	64.5 (as of 4/29)	.18 in (4/15-21)
Quincy, IL*	274	
Rockford, IL*	84	
Springfield, IL*	244	
Waukegan, IL*	56	

**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

European elm flea weevil (minor)

European elm flea weevil (*Orchestes alni*) adults (Fig. 2) are already feeding on the newly emerging leaves of elms. This pest first appeared in Northern Illinois in 2003 and has regularly caused foliage damage to elms during the past few years.

Adult feeding results in tiny shot holes in the leaves, and heavy feeding can cause newly expanding leaves to wither and turn brown. After feeding, the female weevil cuts a cavity into the leaf mid-vein and inserts an egg. The hatching larvae create blotch mines at the leaf tips. Larvae feed for about 2-3 weeks, and then pupate within the mined leaf. Very heavy feeding can reduce photosynthetic capacity of the tree, thereby impacting overall tree vitality.



Figure 2 Adult European elm flea weevil

Management: Insecticides are effective in controlling adults and could be applied now. Depending on how long the insecticide is effective, several applications may be needed. However, spraying a large elm may not be practical.

Good website:

<http://www.mortonarb.org/trees-plants/plant-clinic/help-pests/european-elm-flea-weevil>

Spruce spider mite (potentially serious)

Spruce spider mites (*Oligonychus ununguis*) are causing stippling on the needles of hemlock. Spider mites are very tiny (you need a hand lens to see them clearly) and have eight legs. Spider mites have needle-like mouth parts which they use to suck up sap, leading to stippling of needles (Fig. 3). Badly infested needles appear bronze and fall off the tree. Spruce spider mites prefer cool temperatures in the 60s to low 70s°F and become inactive during the hot summer months. This is unlike two-spotted spider mites that prefer warm weather. Damage from spruce spider mites often becomes visible later in the season after the mites are gone. In addition to spruce, arborvitae is a frequent host. Juniper, hemlock, pine, Douglas fir, Fraser fir, and larch can also be attacked by this pest.



Figure 3 Stippling from spruce spider mite feeding

Remember that not all spider mites are pests. Some mites are predacious mites, that is, they eat the bad spider mites. So, how can you tell the difference between the pests and the predators? Shake a branch vigorously over a blank, white piece of paper. If the tree

has mites, you will see tiny dots running around on the paper. If you crush them with your finger, they will be either green or yellowish-orange. The green ones have been eating plants, but the yellowish-orange ones have been eating other spider mites. Predaceous mites also move faster and generally have longer legs. Having a lot of predaceous mites reduces your need to use chemicals.

Management: There are many predators of spruce spider mites, including lady beetles (ladybugs). Sometimes a strong spray of water can blast spider mites off the tree. Insecticides may be needed for severe outbreaks.

Good websites:

<http://www.mortonarb.org/trees-plants/plant-clinic/help-pests/mites>

Woolly alder aphid (minor)

Woolly alder aphids (*Prociphilus tessellates*, formerly *Paraprosciphilus tessellates*), have been found on alders on the Arboretum grounds. These are sap-feeding insects. Two hosts are needed to complete their life cycle: alders and silver maples. The eggs are usually laid in fall in the bark of the maples. When the young hatch in spring, they collect on leaves and reproduce. Their offspring fly to alders and collect on the twigs (Fig. 4) where new generations develop. They are small and covered with white waxy filaments, which makes them easy to see. The presence of honeydew and sooty mold will also make them easy to find (our scouts found honeydew and sooty mold present). In fall, they will fly back to the silver maples to lay eggs. They do little damage.



Figure 4 Woolly alder aphids

Management: Aphids can be dislodged from plants using a strong jet of water from the hose. Doing this periodically will keep the aphid populations low and allow the parasites and predators to build up to effective control levels.

Good websites:

<http://www.ipm.iastate.edu/ipm/hortnews/2000/7-21-2000/woollyaphid.html>

<http://bygl.osu.edu/content/dancing-white-puffballs-alder>

Boxwood spider mite (potentially serious)

Boxwood spider mite (*Eurytetranychus buxi*) has been found on 'Green Mountain' boxwood at The Morton Arboretum. This is the first report of this pest on the Arboretum grounds. Boxwood spider mites, like other species of spider mites, are sap feeders and their feeding leads to a stippling of the leaves. This mite overwinters as eggs. There can be multiple generations per year. Heavy infestations may lead to defoliation. Boxwood spider mites are

smaller than two-spotted spider mites and may be difficult to see. The mites and their eggs are found on the lower side of the leaves.

Boxwood is the only host for this species. Japanese boxwood is reported to be less susceptible.

Management: A strong stream of water from the garden hose can greatly reduce populations of this pest. For heavy infestations, chemical control may be warranted. Treat in late spring when mites are first noticed.

Good website: http://msue.anr.msu.edu/news/boxwood_insect_pests

Pest Updates: Diseases

Wetwood and slime flux (minor)

The Morton Arboretum Plant Clinic is receiving reports of wetwood and slime flux on a variety of trees this spring. This bacterial disease is usually associated with elms and poplars, but can affect other tree species. The bark or trunk of the tree appears to be water-soaked. 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 liquid waste products through openings and weak points in the tree. When wetwood ooze becomes a chronic problem, the resulting flow of ooze is called slime flux. If this toxic liquid is transported internally to branches, wilting and/or defoliation may occur. Wilting is rarely seen, but areas of dead bark are common. On the plant surface, this liquid supports the growth of many other kinds of bacteria and fungi that sometimes results in 'slime' being produced on the surface of the bark. The slime can be various colors (Fig 5 and 6).

Management: There is no cure for wetwood. 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 much, 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 disinfect tools before pruning another tree.

Good web sites:

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



Figure 5 Slime flux



Figure 6 Slime flux

Cankers (potentially serious)

The Plant Clinic continues to receive numerous reports of trees with cankers, especially young maple trees. Canker diseases commonly affect stressed trees, and trees in our area are stressed for many reasons. The drought of 2012, flooding of 2013 and the harsh winter of 2013-14 have added a great deal of stress to these trees, opening them up to attack from canker-causing pathogens. Many of the maple trees we see with cankers have been planted in the last few years, so transplanting stress may be a factor, along with the environmental stress. Some of these trees have also been planted too deep, or in some cases, we are seeing large maples planted with very small root balls and this may be increasing transplant stress. As a general practice, The Morton Arboretum recommends planting smaller specimens of any tree. Smaller trees usually establish faster than larger caliper trees.

Cankers are not limited to maple trees. With all the environmental stress of the last 2-3 years, many species are developing cankers. We have received many reports of many other species of trees and shrubs with cankers on their trunks.

Management: Cankered branches need to be pruned out. After locating the canker (usually a dark or sunken area in the bark) make your pruning cut six inches below the canker. Disinfect pruning tools between cuts. Give the tree good care (proper watering, proper fertilizing) to minimize additional stress. For new plantings, select trees and shrubs that are adapted to the planting site. Avoid planting root balls too deeply and avoid injuries to stems and trunks during planting.

Good website: <http://www.mortonarb.org/trees-plants/plant-clinic/help-diseases/canker-diseases>

Volutella blight on pachysandra (potentially serious)

The Plant Clinic at The Morton Arboretum has had a few reports of *Volutella* blight on Japanese pachysandra (*Pachysandra terminalis*) on our grounds. *Volutella* blight, caused by the fungus *Volutella pachysandricola*, will cause leaf blight and stem cankers on pachysandra. Symptoms first noticed in early spring as brown to tan leaf spots can be confused with winter desiccation. The spots will enlarge and may eventually cover the entire leaf. Concentric circles form within the spots (Fig. 7) and are diagnostic for this disease. Leaves 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. Winter damage 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. 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,



Figure 7 *Volutella* on pachysandra leaves

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. Bottom line: consider whether the site is one in which pachysandra can thrive.

Management: Start with healthy plants that are free of disease. Pachysandra prefers filtered sun or full shade more than full sun conditions, and will be stressed by the latter and 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 in early spring, when weather is dry, to improve air circulation. Avoid over-fertilization, which causes dense foliage that encourages infection. In winter, avoid piling snow on pachysandra beds. Fungicides may be helpful in the early stages of the disease.

Good websites:

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

Cedar-rust update

In issue 2 (April 17, 2015) we reported that the galls of cedar-apple and cedar-hawthorn rust were beginning to expand their telial spore horns. At that time they had expanded to about 1/8 inch. They are not further along at this time, most likely due to spotty rainfall in many areas in the last two weeks. Telial horns are now reported between 1/8 and ¼ inch long.

Miscellaneous:

Replacing ash trees (or just planning for an additional tree in the landscape)

With the death of so many ash trees due to emerald ash borer, the big question is “What tree should I plant to replace my ash tree?” The answer is that there are many trees from which to choose, and we should choose many. Diversity needs to be the word of the day, everyday. While it can be beautiful to have many of the same type of tree planted along city streets and in parks, this can be a deadly practice. Whenever we have many of the same type of plant in one area (a monoculture), we are setting the banquet table for diseases and insects.

Dutch elm disease and emerald ash borer are good examples of this. Elms lined the streets of many cities, and when Dutch elm disease was introduced in this county it went from tree to tree, wiping out entire parkway plantings. We have seen the same thing with ash trees. Our native woodlands are full of ashes and so are our city streets. The emerald ash borer did not have to go far to find a host tree.

As we start to replant to replace ash trees, we must start to diversify and plant many different species of trees. What does this mean to the individual? Look around and see what is already planted in your neighborhood, then plant something else. What about homeowners associations? If you had to cut down 50 ash trees, don't replace them with 50 of the same

species. This is one instance where we need to separate ourselves from the 'buy in bulk' mentality.

There is help for homeowners, municipalities and landscapers in the decision-making process. The Morton Arboretum, collaborating with partners through the Chicago Regional Tree Initiative, has developed The Northern Illinois Tree species list and the Northern Illinois Tree Selector. The Northern Illinois Tree Species list is online as a downloadable pdf at http://www.mortonarb.org/files/14CT_Northern%20Illinois%20Tree%20Species%20List.pdf. The Northern Illinois Tree Selector in an interactive site found online at

<http://www.mortonarb.org/trees-plants/tree-and-plant-advice/tree-selector>

The selector allows the user to input the characteristics they would like to see in a tree. From that, a list of possible choices is generated, with links to each plant. These tools will be useful to anyone facing the choice of having to select a new tree. Even if emerald ash borer has not touched your life, this site is also great for anyone looking to simply add a new tree to the landscape.



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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 Health 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.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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