

Plant Health Care Report

Scouting Report of The Morton Arboretum

May 24 - 30, 2008

Issue 2008.07

Our report includes up-to-date disease and insect pest reports, as well as color images, for northeastern Illinois. You'll also find a table of accumulated growing degree days throughout Illinois, precipitation, and plant phenology indicators to help predict pest emergence.

What a spring this has been! Notice how our degree days have not increased by much since last week. We have been experiencing some cool weather again this week, causing the development of insects and diseases to slow down. Another plus is that the cool weather has extended our spring flowering season.

Quick View

What Indicator Plants are in Bloom at the Arboretum?

Don Orton's favorite indicator plant, bridalwreath spirea (*Spiraea x vanhouttei*), is in full bloom.

Accumulated Growing Degree Days (Base 50): 238.0



Insects

- Bronze birch borer
- Ash/ lilac borer
- Obliquebanded leafroller
- Marginal leaf fold gall

Diseases

- Ash Anthracnose
- Anthracnose on sycamore
- Frogeye leaf spot
- Butternut canker

Miscellaneous

- EAB trap tree

Degree Days and Weather Information

As of May 29, 2008, we are at 238 growing degree days which is 18 degree days behind of the historical average (1937-2006) and 22 growing degree day behind last year.

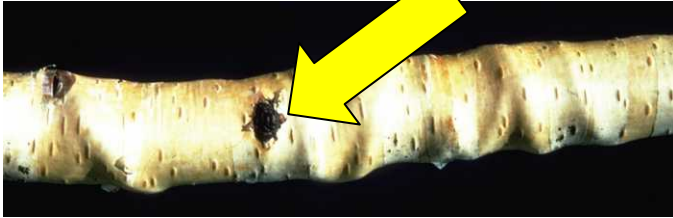
Location	Growing Degree Days through May 29	Precipitation between May 24 to 29 in inches
The Morton Arboretum (Lisle, IL)	238.0	0.0
Chicago Botanic Garden (Glencoe, IL)*	240.0	1.1
Chicago O-Hare Airport*	251.5	1.11
Aurora, IL	261.0	
Bloomington, IL	338.5	
Champaign, IL	371.5	
DuPage County Airport (West Chicago, IL)	281.5	
Midway Airport	311.0	
Danville, IL	445.5	
Decatur, IL	419.5	
DeKalb, IL	279.5	
Moline, IL	367.0	
Palwaukee Airport (Wheeling, IL)	243.5	
Peoria, IL	407.0	
Peru, IL	427.0	
Pontiac, IL	339.0	
Rantoul, IL	432.5	
Rockford, IL	305.5	
Romeoville, IL	284.5	
Springfield, IL	431.0	
Waukegan, IL	172.5	
Madison, WI	217.0	
Milwaukee, WI	150.5	

**Thank you to Mike Brouillard, Green Living, Inc. and Chris Yooning, Chicago Botanic Garden for supplying us with this information.*

We obtain most of our degree day information from the Virtual Arborist web site. For additional locations and daily degree days, go to <http://virtualarborist.com/>.

This Week's Sightings

Bronze birch borer



D-shaped exit hole.

We are finding both larvae and adults of bronze birch borer (*Agrilus anxius*) in Asian white birch (*Betula platyphylla*). The adults chew holes that are D-shaped, 1/8 inch in diameter, and bronze when they emerge from birch trees. The adults are slender olive-bronze beetles somewhat flattened on top and about 1/2 inch long. Larvae are creamy white, segmented, legless grubs. They reach about 1 inch long and 1/8 inch wide at maturity.

This insect overwinters in the larval stage in tunnels beneath the bark. Adults emerge in late May to early June and continue into August leaving characteristic D-shaped exit holes in the bark. About one week after emergence, females begin laying eggs in crevices and cracks in the bark. The eggs hatch in 10 to 14 days and the larvae immediately bore into the cambium layer (and occasionally into the sapwood), where they feed and tunnel in a zigzag manner. Larva tunneling severely injures the tree's vascular system, disrupting the flow of water and nutrients. Girdling of the cambium of a branch or trunk by tunneling larvae results in sudden wilting and death of the branch or entire tree.

Early symptoms of infestation are sparse chlorotic foliage in the upper crown followed by leaf wilting and branch dieback. Ridges and bumps caused by tunneling can often be seen on branches.

The bronze borer is considered a secondary pest that attacks stressed trees. (Larvae have been reported to be unable to survive in healthy trees.) All birches can be attacked but paper, white, and water birch are among the preferred species.

Control: The most important factor in managing the bronze birch borer is to maintain tree vigor through proper fertilization, watering, and controlling aphids and leafminers. Do not prune susceptible birches during the adult flight period from late May through August since this may attract more egg-laying females. Prune off dead and dying branches in fall and winter. Systemic insecticides provide protection and should be applied in early spring. Refer to the *2007 Commercial Landscape & Turfgrass Pest Management Handbook (CPM)* for commercial applicators and the *Home, Yard & Garden Pest Guide (HYG)* for homeowners for specific chemical recommendations.

In the future, plant resistant birches and site them properly. Birches should be planted in shady, cool, and moist wooded areas: otherwise they are more likely to become stressed, lose vigor, and succumb to attack. River, monarch, and heritage birch have shown resistance to this borer.

Good websites:

<http://ohioline.osu.edu/hyg-fact/2000/2018.html>

<http://www.extension.umn.edu/distribution/horticulture/DG1417.html>

Ash/lilac borer



We are beginning to catch ash/lilac borer (*Podosesia syringae*) adults in our pheromone traps. This is NOT the emerald ash borer, but is the native borer. The adults are wasp-like clear-wing moths with a 1/2 inch long brown body, brownish-black forewings, and transparent hind wings with a brown border. Sometimes they have one or more yellow stripes around their bodies. The insect overwinters as a partially grown larva within the host tree and emerges as an adult in late spring. The female lays her eggs in the bark of

stressed plants in the Oleaceae family, especially lilac, ash, and privet. After hatching, brown-headed, creamy white larvae tunnel into wood and feed on phloem. Exit holes are about ¼ inch in diameter and circular. Frass and sawdust is pushed out of the exit holes and may accumulate under the exit holes. Sometimes pupal skins can be seen emerging from exit holes. Branches can be severely damaged by this borer, and severely infested trees may die.

Control: Stressed and newly transplanted trees are particularly vulnerable. Site trees and shrubs in a place where they will thrive and keep trees mulched and watered during dry periods. Prune out heavily infested stems. Since the borers are attracted to the larger lilac canes, keep lilacs rejuvenated by making basal cuts and letting new trunks grow. For specific chemical recommendations, refer to the CPM if you are a commercial applicator or the HYG if you are a homeowner.



Good websites:

- http://www.ipm.uiuc.edu/fruits/insects/ash_lilac_borer/
- <http://www.ext.vt.edu/pubs/entomology/444-278/444-278.html>

Oblique banded leaf roller



One of our hawthorns (*Crataegus* spp.) is being attacked by an oblique banded leaf roller caterpillar (*Choristoneura rosaceana*). The insect primarily attacks members of the rose family such as roses, hawthorns, cotoneaster, apples, and *Prunus* species. It is a pale yellow green caterpillar with thin hairs on its body. Leaf rollers choose growing terminals and roll the leaves together, fastening the edges with strands of silk. The insect feeds within the rolled up leaves.

Control: Leaf rollers generally don't do sufficient damage to warrant control.

Good website:

- <http://www.ipm.msu.edu/fruitpests/leafroller.htm>

Marginal leaf fold gall



The marginal leaf fold gall has been found on many of our pin oak foliage. The gall is formed by a midge. Larvae feeding activity stimulates the formation of a tubular roll and swollen area on the margins of the leaf, which may house several larvae. After completing development, the larvae leave the gall and drop to the ground where they overwinter until the following spring. Foliage galls of this type rarely harm the host plant.

Control: It should be remembered that despite the unattractiveness of galls, their presence usually is not harmful to the host plant. Consequently, a control response with chemicals in most situations is not recommended.

Larvae inside folded gall

Ash anthracnose

We are getting calls in the plant clinic that initial symptoms of ash anthracnose are being seen on green ash (*Fraxinus pennsylvanica*). Anthracnose is a foliar disease affecting many deciduous trees including ash, sycamore, elm, oak, and maple. The disease is caused by several different fungi, including *Apiognomonium errabunda*, *A. veneta*, *Discula fraxinea*, *Glomerella* sp., *Gnomonia* sp., and *Stegophora ulmea*, depending on host species.

Symptoms vary with the plant host, weather, and time of year when infection occurs. Infection is more severe when prolonged spring rains occur after new growth is produced. In the case of ash anthracnose, initial symptoms are small irregular, dark brown, necrotic patches, often accompanied by leaf curl and distortion. Premature leaf drop may occur on highly susceptible species. Damage is usually minor on ash in our region and symptoms dissipate as rains diminish and temperatures increase in early summer.

Control: Cultural controls are usually sufficient to reduce the severity of ash anthracnose in our region:

- Prune trees to remove diseased twigs and branches and to open up the canopy for better air circulation and light penetration.
- Maintain tree vigor with proper watering and fertilization.
- Mulch around the base of the tree (always keep mulch about 2 to 4 inches from the trunk).
- In the fall, clean up and destroy fallen leaves to reduce the source of inoculum.
- Select species that are resistant to anthracnose. Ash anthracnose is worse on green ash (*F. pennsylvanica*) cultivars than white ash (*F. americana*), and the Chinese ash (*F. chinensis*) appears to be most susceptible. Our native pumpkin ash (*F. tomentosa*) and blue ash (*F. quadrangulata*) appear to be most resistant, but none are immune. To read further on this topic, see the *Journal of Arboriculture*, Vol. 28, No. 1 or visit: <http://joa.isa-arbor.com/request.asp?JournalID=1&ArticleID=24&Type=2>.



Good website:

http://www.ipm.iastate.edu/ipm/hortnews/2007/5-23/ash_anthracnose.html

Anthracnose on sycamore



We are seeing early symptoms of anthracnose on American sycamore (*Platanus occidentalis*), caused by the fungus *Apiognomonium veneta*. Leaf blight symptoms are brown foliar lesions that extend along the veins, often in V-shaped patterns. The leaves turn brown and may drop prematurely. Sycamore anthracnose is enhanced by cool, wet weather during leaf development and dissipates during hot weather. Considerable defoliation may occur in late spring, but trees normally bounce back and produce a second set of leaves that remain disease free.

There are two other stages of this anthracnose: shoot and leaf blight and canker formation. Shoot and leaf blight results when

the pathogen enters succulent shoots. It causes the rapid death of expanding shoots and leaves. The pathogen overwinters in twigs and is active whenever temperatures are high enough in the fall, winter, and spring. During winter, cankers form on infected shoots and kill the buds.

Repeated infection results in deformed shoots and witches brooms (dense clusters of twigs). Although this disease can weaken trees and increase their susceptibility to attack by other pathogens and pests, it is not lethal.

Control: Dead twigs should be pruned as they develop throughout the growing season. Fertilize trees that are defoliated to increase their vigor. In the fall, rake and discard fallen leaves to reduce the source of inoculum. It is impractical to spray fungicides on large trees, but for smaller, specimen trees, the disease can be controlled with fungicides applied in four intervals: 1) just before bud break, 2) during bud break, 3) when leaves are fully expanded, and 4) 10 to 20 days later. Systemic fungicide injections are also used in spring and fall. For specific chemical recommendations refer to the CPM or HYG.

In the future, plant resistant varieties. Oriental plane tree (*Platanus orientalis*) and London plane tree (*Platanus x acerifolia*) are less susceptible than American sycamore. Unfortunately, they are less cold hardy so they must be sited carefully.

Good websites:

- http://www.na.fs.fed.us/spfo/pubs/fidls/anthracnose_east/fidl-ae.htm
- http://www.oznet.ksu.edu/dp_hfr/extendsn/problems/anthrac.htm

Frogeye leaf spot



We are seeing the beginning of frogeye leaf spot on crabapple (*Malus* spp.). Frogeye is caused by the fungus *Botryosphaeria obtusa*, which also infects the fruit and bark. Right now, the disease appears as round, purple leaf spots with tan centers. The spots turn gray-brown as they age and can develop concentric circles; hence the name frogeye. Early frogeye is sometimes mistaken for apple scab, and the two may occur together, but the symptoms are quite different. Frogeye spots also contain pepper-like fruiting structures (pycnidia) that are visible with a hand lens in mature lesions.

We have evaluated more than seventy crabapple cultivars for resistance to both frogeye leaf spot and scab diseases during the last two years. The frogeye disease level varies from year to year and is worse after very cold winters. Below is a list of cultivars from University of Illinois Extension that are considered good for Illinois and without other major disease problems.

Cultivar	Form (H x W)	Flower	Fruit
<i>M. baccata</i> 'Jackii'	20' x 20'	white	red-purple
<i>M.</i> 'Lancelot'	10' x 8'	white	gold
<i>M.</i> 'Prairie Maid'	20' x 25'	pink	orange- red
<i>M.</i> 'Prairiefire'	20' x 20'	red-purple	purple-red
<i>M.</i> 'Red Jewel'	18' x 12'	white	red
<i>M. sargentii</i>	8' x 15'	white	red-purple
<i>M.</i> 'Silver Moon'	20' x 15'	white	red

Control: Remove dead branches and prune susceptible trees to thin out dense crowns that retain moisture. Fruits that become spotted or dried (mummified) are another overwintering inoculum source that should be removed if possible. Choose resistant cultivars whenever possible for future plantings.

Good websites:

<http://ohioline.osu.edu/hyg-fact/3000/3030.html>

<http://www.ag.uiuc.edu/~vista/abstracts/a814.html>

Butternut canker

Butternut canker was found on butternut (*Juglans cinerea*). Butternut canker is a devastating canker disease. The fungus (*Sirococcus clavigignentijuglandacearum*) is killing butternuts throughout their natural range in eastern North America. Like most canker diseases, the fungus infects trees through wounds. However, the trees have no resistance and are soon covered with cankers. Cankers are oval-shaped and form on all parts of the tree. The underlying wood turns dark brown, as fungal hyphae spread beyond the bark and kill the cambium. The bark first turns brown, then mushy, and finally splits and shreds. Eventually cankers coalesce, girdling the tree and killing it.

Control: At present there is no control except removal of infected trees. Studies suggest that walnuts may sometimes harbor this pathogen, but they're not much affected by it.

Good website:

http://na.fs.fed.us/spfo/pubs/howtos/ht_but/ht_but.htm



Emerald ash borer (EAB) trap tree



Emerald ash borer (EAB) (*Agrilus planipennis* Fairmaire), is an exotic beetle that was discovered in southeastern Michigan near Detroit in the summer of 2002. The larvae (the immature stage) feed on the inner bark of ash trees, disrupting the tree's ability to transport water and nutrients, causing the destructive damage. Adults leave a D-shaped exit hole in the bark when they emerge in May - August. The adult beetles are metallic green and about 1/2 inch long. They nibble on ash foliage but cause little damage. Symptoms of ash decline, which may be caused by EAB or other stressors, include upper crown dieback, yellow foliage or small branches that come directly out of the trunk. Also woodpeckers like EAB larvae; so heavy woodpecker damage on ash trees may be a sign of infestation.

Besides Michigan, the emerald ash borer is also established in Windsor, Ontario, was found in Ohio in 2003, northern Indiana in 2004, northern Illinois and Maryland in 2006, western Pennsylvania and West Virginia in 2007. Here in Illinois the state quarantine boundaries include the entire counties of Boone, Cook, DeKalb, DuPage, Grundy, Kane, Kankakee, Kendall, Lake, LaSalle, McHenry, Putnam, Will, and Winnebago. State and federal quarantines have been established to limit the artificial (or human-assisted) spread of the pest. The federal quarantine of the entire state of Illinois restricts the

movement of all EAB-host material (ash nursery stock, ash wood and all non-coniferous firewood) across the state borders to other states.

A few weeks ago the arboretum set up a trap tree on the grounds; trap trees are an effective means for detecting this pest. Trap trees are trees that have been intentionally wounded by girdling. Research has shown them to be attractive breeding sites for the emerald ash borer. The trees are taken down in fall, and the bark is removed to inspect for EAB larvae and adult emergence holes.

Good web sites:

<http://www.emeraldashborer.info>

<http://www.na.fs.fed.us/fhp/eab/>

<http://www.agr.state.il.us/eab>

<http://www.aphis.usda.gov/ppq/ep/eab/>

What to Look for Next Week

Next week we will be looking for apple scab and azalea sawfly.

Quote of the week: “A weed is a plant that has mastered every survival skill except for learning how to grow in rows.”

Author: Anonymous



The Plant Health Care Report is prepared by Trica Barron, Plant Health Care Technician, and edited by Donna Danielson, Plant Clinic Assistant; Fredric Miller, PhD, research entomologist at The Morton Arboretum and professor at Joliet Junior College; Doris Taylor, Plant Information Specialist, and by Carol Belshaw, Plant Clinic 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.

The *2007 Commercial Landscape & Turfgrass Pest Management Handbook* (CPM), for commercial applicators, and the *Home, Yard & Garden Pest Guide* (HYG) for homeowners from the University of Illinois, are available by calling (800-345-6087). You may also purchase them online at <https://pubsplus.uiuc.edu/ICLT-07.html> (commercial handbook) and <https://pubsplus.uiuc.edu/C1391.html> (homeowners' guide). One further source is your local county extension office.

This report is available on-line at The Morton Arboretum website at <http://www.mortonarboretumphc.org/>.

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 PHC reports should be directed to Trica Barron at tbarron@mortonarb.org.