

Plant Health Care Report

Scouting Report of The Morton Arboretum

May 22– May 28, 2009

Issue 2009.07

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.

Quick View

What Indicator Plants are in Bloom at the Arboretum?

Black locust (*Robinia pseudoacacia*) is in full bloom.



Accumulated Growing Degree Days (Base 50): 347.5

Insects

- Four lined plant bug
- Boxwood psyllid
- Ash flower gall
- Bristly roseslug sawfly
- Imported willow leaf beetle

Diseases

- Apple scab
- Peach leaf curl
- Oak leaf blister
- Sycamore anthracnose
- Frog-eye leaf spot
- Cedar apple rust on crabapple
- Downy leaf spot

Degree Days and Weather Information

As of May 28, 2009 we were at 347.5 growing degree days which is about seven days behind average. The historical average (1937-2008) for the same date is 434.1 degree days. Last year we were at 268 growing degree days on May 28.

Location	Growing Degree Days through May 28	Precipitation between May 22 to May 28 in inches
The Morton Arboretum (Lisle, IL)	347.5	1.47
Chicago Botanic Garden (Glencoe, IL)*	n/a	
Chicago O-Hare Airport*	318.5	1.47
Aurora, IL	310.0	
Champaign, IL	510.1	
DuPage County Airport (West Chicago, IL)	384.1	
Decatur, IL	545.9	
Moline, IL	431.9	
Peoria, IL	487.6	
Quincy, IL	565.2	
Rockford, IL	333.7	
Waukegan, IL	222.3	
Wheeling, IL	296.5	

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

Four-lined plant bug

Four-lined plant bug nymphs (*Poecilopsus lineatus*) have been found on many different kinds of plants including wild hydrangea (*Hydrangea arborescens*). This insect feeds on 250 species, including many kinds of perennials, vegetables, and shrubs such as bluebeard, forsythia, and sumac. Feeding injury is frequently mistaken for leaf spots. Four-lined plant bugs have a piercing, sucking mouthpart which they use to break plant cells and then flush the feeding wound with digestive juices. Damage appears as dark leaf spots which subsequently turn translucent. The damage they do is more serious on herbaceous plants than on woodies. Sometimes by the time the damage is noticed, the insect isn't there anymore. Both nymphs and adults feed on leaves, creating the spots.



Damage from the four-lined plant bug

Nymphs are bright yellow to red with rows of black spots on the abdomen. The adult stage is 1/4" to 1/3" long and has four longitudinal black lines on its yellow or green back, thus the name. It's quite a shy insect that scurries away when you try to find it. The insect overwinters as eggs laid in slits that are cut into plant shoots. There is one generation per year.

Control: Some people try to hand-pick these insects, but their timidity makes them difficult to catch. For information about chemicals to use for serious infestations, refer to the *Commercial Landscape and Turfgrass Pest Management Handbook 2007* (CPM) if you are a commercial landscaper or the *Home, Yard, and Garden Pest Guide* (HYG) if you are a homeowner. Refer to “plant bugs.”



Four-lined plant bug nymph



Four-lined plant bug adult

Good web sites:

<http://wihort.uwex.edu/gardenfacts/XHT1101.pdf>



appreciate these beneficial insects.

Boxwood psyllid

Boxwood psyllids (*Cacopsylla buxi*) are starting to hatch on Korean boxwood (*Buxus microphylla* var. *koreana* ‘Wintergreen’). The psyllids overwinter as tiny orange eggs in the bud scales of the boxwood. As the buds open, the psyllids hatch and begin to feed. The nymphs are about 1/16th of an inch long, yellowish, and partially covered with a white, flocculent secretion that protects them from parasitoids and chemical sprays. Their feeding causes cupping of the leaves. Winged adults appear in late May to early June. We sometimes see ladybird beetles (also known as ladybugs), feeding on the psyllids, so all those people whining about overwintering ladybird beetles flying around the light fixtures in their homes should keep quiet and

Control: Damage is mostly aesthetic. Shearing boxwoods reduces the population as the insect or the eggs are removed in the process. Chemical insecticides can be applied, but if using a spray, it is important to spray inside the cupped leaves.

Good websites:

http://woodypests.cas.psu.edu/FactSheets/InsectFactSheets/html/Boxwood_Psyllid.html

http://www.umassgreeninfo.org/fact_sheets/piercing_sucking/boxwood_psyllid.html

Ash flower gall

New flower galls are beginning to develop on male (seedless) ash trees. Some people have described them as “bunches of grapes” hanging on the trees. These galls are caused by ash flower gall mites, an eriophyid mite (*Aceria fraxiniflora*). They feed on male flowers before buds are fully expanded. Feeding induces formation of round, greenish galls that become dry and turn brown in late summer and remain on the tree over the winter. Normally male flowers fall off after disseminating pollen, but when infested with ash flower gall mites, the galls may stay on the tree as long as two years. Seedless green ashes are most commonly attacked.



Control: Control is not necessary, as damage is just aesthetic. Although unsightly, the ash flower gall does not harm the tree. We think of it as winter interest.

Web sites:

<http://www.entomology.umn.edu/cues/Web/065AshFlowerGallMite.pdf>

<http://www.uwex.edu/ces/wihort/gardenfacts/X1048.pdf>

Bristly roseslug sawfly

The larvae of bristly roseslug sawflies (*Cladius difformis*) were found feeding on roses. Roseslugs are not slugs, but are a sawfly. There are three kinds of roseslug sawflies that feed on roses, but the bristly roseslug is the most common. The larvae of all three are light green with brownish-orange heads. The bristly roseslug is not slimy like the others, but has short bristly hairs, thus the name. They window-feed when young, feeding from the leaf underside. When older, they eat irregular holes in the leaves. Right now we’re seeing the irregular holes in leaves. Roseslug females cut slits along the edges of rose leaves with their saw-like ovipositors and insert eggs into the slits. There may be several generations per year.

Control: A hard spray of water knocks sawfly larvae from plants. Thank goodness, they can’t crawl back onto roses. They are susceptible to natural enemies, including predators and parasitoids; but the natural enemies may not occur in large enough numbers to prevent damage. Insecticidal soap may be sprayed on the insects.

Imported willow leaf beetle

We are finding the imported willow leaf beetle (*Plagioderia versicolora*) larvae and adults feeding on the leaves of peach-leaf willow (*Salix amygdaloides*). Young larvae feed in groups and skeletonize leaves. As they mature, larvae consume all leaf tissue except the veins. Adults, who cause minor damage, chew notches and holes in leaves. Larvae are black and very young larvae can be a cream color but darken with age. Adults are about ¼-inch long, oval, and metallic black to greenish blue.

Adult beetles overwinter under loose bark of willows and poplars or in piles of nearby debris and leaf litter. Adults begin feeding



on young foliage in late April to early May and lay eggs shortly thereafter. Young larvae emerge a few days later and begin feeding. There are two to three generations per year in our region.

Control: Treatment of imported willow leaf beetle is generally not necessary. However, in severe and repeated infestations, control may be warranted. **Insecticides should be applied now to control first generation larvae.** Refer to the CPM or HYG for specific chemical control recommendations.

Good websites:

<http://www.entomology.cornell.edu/public/IthacaCampus/ExtOutreach/DiagnosticLab/Factsheets/ImportedWillowLeafBeetle.html>

<http://www.entomology.umn.edu/cues/Web/154ImportedWillowLeafBeetle.pdf>

Apple scab

We're seeing the initial signs of apple scab on Japanese flowering crabapple (*Malus floribunda*). The lesions look like velvety, olive-green leaf spots and will continue to develop into larger, irregular dark spots. Sunken spots may also appear later on fruits. Often lesions develop along the mid-veins of the leaves. Infected leaves eventually turn yellow and drop prematurely on susceptible hosts. The scab fungus (*Venturia inaequalis*) overwinters on fallen leaves and on lesions on twigs. Sunken spots may appear later on fruits, and susceptible crabapples can be defoliated in severe disease years.



Scab severity is a product of hours of leaf wetness and temperature and host susceptibility. In years with mild, wet springs, we have a lot of scab. Scab severity is much less during dry springs.

Control: The best way to avoid apple scab is to plant resistant varieties. The Morton Arboretum brochure "Crabapples for the Home Landscape" lists recommended crabapples and discusses their resistance to several diseases. It is available at <http://www.mortonarb.org/component/content/article/193-insects-diseases/730-apple-scab.html>. Remember, resistant does not mean immune. Resistance just means that in the typical year, a resistant plant won't suffer as much from the disease as a susceptible plant. However, it may exhibit symptoms in "bad" scab years.

Caring for your trees, such as watering during summer droughts, may moderate effects of defoliation and reduced photosynthesis in affected trees. As the fungus overwinters on fallen leaves and blighted twigs, collecting and destroying these tissues may help reduce the source of inoculum next year. For information about chemicals to use for serious infections, refer to the CPM if you are a commercial applicator or HYG if you are a homeowner.

Some crabapples resistant to apple scab:

Malus 'Adirondack'**

Malus baccata var. *jackii**

Malus 'Beverly'*

Malus Camelot 'Camzam'**

Malus 'Centennial'**

Malus 'Dolgo'**

Malus Harvest Gold 'Hargozam'*

*Malus hupehensis**

Malus 'Luwick'**

Malus 'Makamik'*

Malus Molton Lava 'Molazam'***

Malus 'Prairifire'**

Malus 'Professor Sprenger'**

*Malus sargentii***

Malus 'Tina'**

Malus 'Sinai Fire'**

Malus 'Strawberry Parfait'

Malus Sugar Tyme 'Sutyzam'

*also show good resistance to cedar-apple rust

** also shows good resistance to cedar-apple rust and fire blight

*** also shows good resistance to fire blight

Good websites:

<http://learningstore.uwex.edu/pdf/A2173.pdf>

http://web.aces.uiuc.edu/vista/pdf_pubs/803.pdf

http://ohioline.osu.edu/hyg-fact/3000/pdf/HYG_3003_08.pdf

Taphrina fungi are really common this year – we're seeing a lot of both peach leaf curl and oak leaf blister. First....



Peach leaf curl

The plant clinic has received many calls this week about peach leaf curl (*Taphrina deformans*) on peach leaves. This fungal disease is most severe when cool, wet weather is prevalent when the leaves are first emerging. Young, succulent leaves become puckered and deformed as they develop. The puckers almost look like popcorn! The puckered areas turn yellow and then red. A white bloom appears on the deformed part of the leaf. Shortly after, the leaves turn yellow and fall off. Diseased twigs become swollen and stunted. Diseased fruits also become distorted and swollen with discolored areas on the skin. Peach leaf curl generally does not kill the tree, but annual infections may weaken a tree and predispose it to other problems.

Control: The fungus overwinters in buds. Fungicides are only effective when applied in fall after leaf drop or in spring before buds swell. Once the leaves have emerged, fungicides are no longer effective. For specific chemical recommendations, refer to the CPM and HYG.

Good web sites:

http://ohioline.osu.edu/hyg-fact/3000/pdf/HYG_3006_08.pdf

<http://www.agcom.purdue.edu/AgCom/Pubs/BP/BP-54.pdf>

Oak leaf blister

We are seeing early leaf blister symptoms caused by the fungus, *Taphrina caerulescens*, on pin oak (*Quercus palustris*). In spring and early summer, leaves develop wrinkled, raised, pale whitish-yellow blisters on their upper surface and corresponding pinkish-gray depressions on the lower leaf surface. Blisters range from 1/10th of an inch to an inch in diameter. As they age and merge, the blisters turn red brown with pale yellow margins and the leaf may become distorted. Red oak (*Quercus rubra*) is the most



susceptible species. Oak leaf blister, like other Taphrina diseases (e.g., peach leaf curl and plum pockets), usually develops only during cool, wet springs and is more homely than harmful to the oaks. Infected leaves become distorted and may prematurely drop. The disease usually dissipates during the summer.

Control: The fungus survives the winter on twigs and bud scales. On oak, leaf blister is more unsightly than harmful, so control is not a high priority. However, a single, dormant season application of fungicide can help. Fungicides applied after budbreak are useless. Refer to the CPM or HYG for chemical control information.

Good web site:

<http://www.aces.uiuc.edu/vista/abstracts/a663.html>

Sycamore anthracnose

We are seeing early symptoms of anthracnose on American sycamore (*Platanus occidentalis*), caused by the fungus *Apiognomonia 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.mortonarb.org/component/content/article/193-insects-diseases/714.html>

<http://ipm.illinois.edu/diseases/series600/rpd621/index.html>



Frog-eye leaf spot

We are seeing the beginning of frog-eye leaf spot on wild sweet crabapple (*Malus coronaria*). Frog-eye 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 frog-eye. Early frog-eye is sometimes mistaken for apple scab, and the two may occur together, but the symptoms are quite different. Frog-eye spots also contain pepper-like fruiting structures (pycnidia) that are visible with a hand lens in mature lesions.

We evaluated more than seventy crabapple cultivars for resistance to both frog-eye leaf spot and scab diseases a few years ago.. The frog-eye 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://web.aces.uiuc.edu/vista/pdf_pubs/814.pdf

Cedar apple rust on crabapple

Big, bright orange spots have developed on the leaves of wild sweet crabapple (*Malus coronaria*). As with the cedar-hawthorn rust (also known as hawthorn rust) seen in previous weeks, these spots swell, spore producing structures called aecia form on the lower leaf surface, and aeciospores (fungal spores) are released. The aeciospores infect nearby junipers later in the season causing roundish galls to form on the twigs the following spring. Cedar apple rust is primarily a disease of apple and crabapple.



See PHC report of May 1 - 7 (2009.04) for information about the rust on juniper hosts.

Good web site:

http://ohioline.osu.edu/hyg-fact/3000/pdf/HYG_3024_08.pdf



Downy leaf spot

Downy leaf spot, also known as white mold or white leaf spot, caused by the fungus (*Microstroma juglandis*), has been found on shagbark hickory (*Carya ovata*). Powdery, white, fuzzy spots, that are more concentrated near the leaf veins, are forming on the underside of the leaf surface. 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.

Control: Downy leaf spot attacks hickories and walnuts but is not a significant threat to the trees. Brooms can be pruned to improve the appearance of the tree. Chemical control is not recommended.

Good web site:

<http://plantclinic.cornell.edu/FactSheets/hickorydownyleafspot/hickorydownyleafspot.htm>

What to Look for Next Week

We will be looking for maple petiole borers, chlorosis on river birch, and wetwood.

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.mortonarb.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.

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