

Plant Health Care Report

Scouting Report of The Morton Arboretum

May 31 – June 6, 2008

Issue 2008.08

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. Beginning with this report and continuing for the next three months, our report will be issued weekly.

May was cool for our area but with June's arrival, we have jumped right into summer. The swimming pools are open and with the warm muggy temperatures a dip in the pool sounds refreshing. For those of us here at the arboretum we can refresh ourselves by taking our shoes and socks off and walk in the children's garden pond, where the tadpoles have hatched.

Quick View

What Indicator Plant is in Bloom at the Arboretum?

The fringetree (*Chionanthus virginicus*) is in full bloom at the Arboretum.

**Accumulated Growing Degree Days (Base 50):
371.0**

Insects

- Hawthorn leafminer
- Azalea sawfly
- Woolly larch adelgid
- Bristly rose slug sawfly
- Pine needle scale
- Imported willow leaf beetle
- Maple petiole borer
- Dogwood sawfly



Diseases

- Dutch elm disease
- Fire blight
- Apple scab
- Powdery mildew
- Cedar quince rust on hawthorn
- Rose rosette disease

Degree Days and Weather Information

As of June 5, 2008, we are about 13 growing degree days behind of the historical average (1937-2006) and 20 growing degree days behind last year.

Location*	Growing Degree Days through June 5	Precipitation between May 31 – June 5 in inches
The Morton Arboretum (Lisle, IL)	371.0	.89
Chicago Botanic Garden (Glencoe, IL)*	312.0	.78
Chicago O-Hare Airport*	339	1.78
Aurora, IL	400.5	
Bloomington, IL	501.5	
Champaign, IL	540.5	
DuPage County Airport (West Chicago, IL)	413.5	
Midway Airport	445.0	
Danville, IL	517.5	
Decatur, IL	589.0	
DeKalb, IL	411.5	
Moline, IL	526.5	
Palwaukee Airport (Wheeling, IL)	349.5	
Peoria, IL	574.5	
Peru, IL	595.0	
Pontiac, IL	503.0	
Rantoul, IL	611.0	
Rockford, IL	441.0	
Romeoville, IL	422.0	
Springfield, IL	607.0	
Waukegan, IL	261.0	
Madison, WI	312.5	
Milwaukee, WI	218.5	

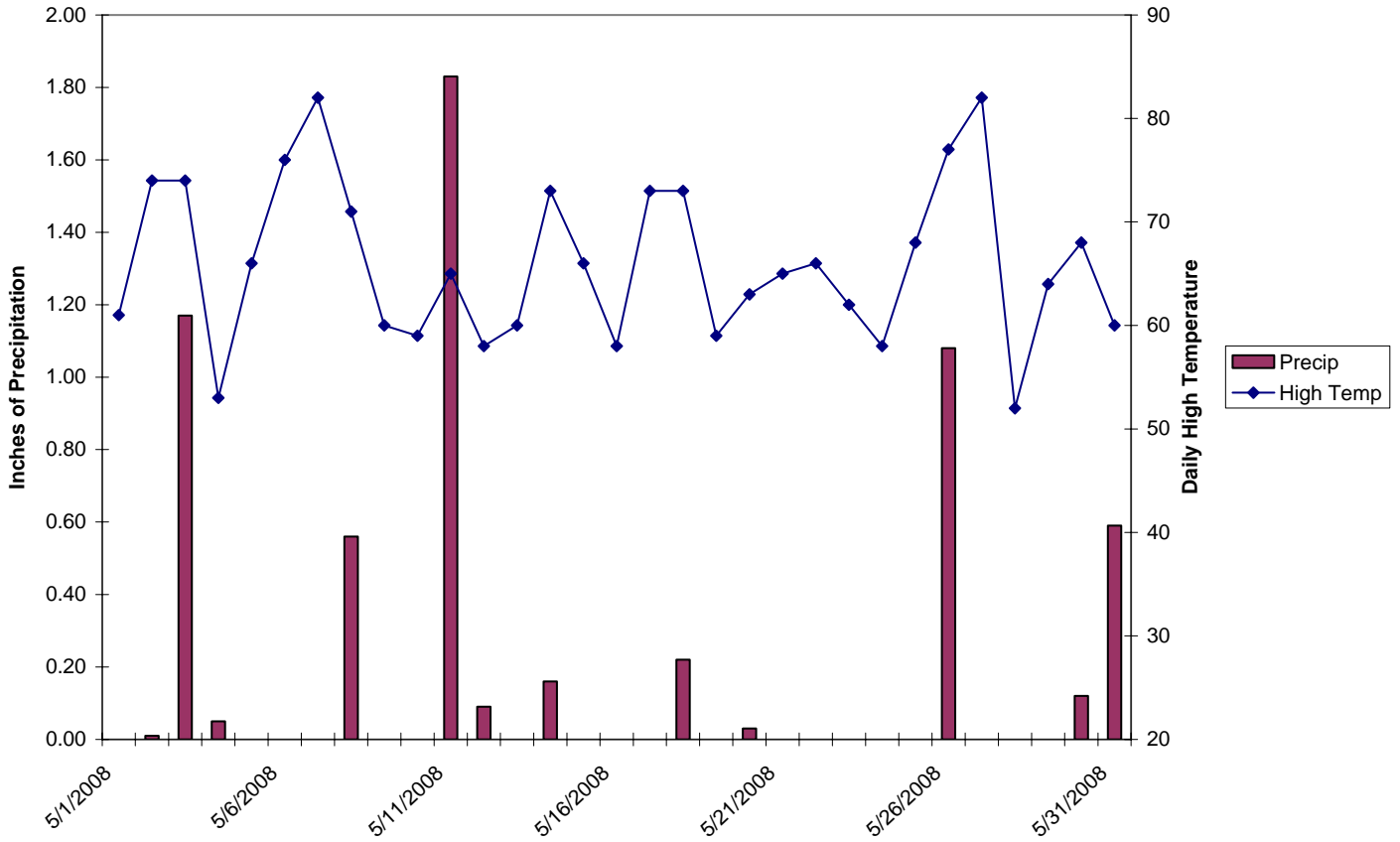
**Thank you to Mike Brouillard, Green Living, Inc. and to Chris Yooning, Chicago Botanic Garden for supplying us with this information.*

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/>.

May Weather

Temperatures have been on the cooler side for the month of May. We also had more than two inches greater precipitation than the historical average for May. The chart on the next page provides daily precipitation and temperature highs for May.

May 2008



Summary of May Temperature and Precipitation Data

	May 2008
Average Daily Temperature	54.3° F
Historical Avg. Daily Temp.	60° F
High Temperature	82° F
Low Temperature	32° F
Total Precipitation	5.91 in.
Historical Precipitation	3.81 in
Total Days with Precipitation	13

This Week's Sightings

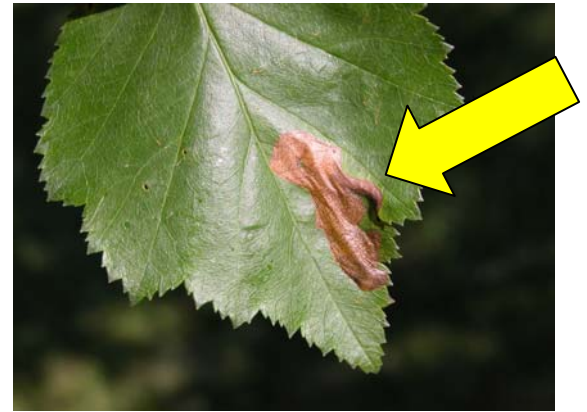
Hawthorn leafminer

Hawthorn leaf miners (*Profenusa canadensis*) are creating mines on leaves of cockspur hawthorn (*Crataegus crus-galli*). The hawthorn leaf miner is a native sawfly. The mines usually appear on the distal end of the leaf instead of all along the midrib as is common with many other leaf miners. When the mines are larger, the leaves will almost look blighted. If you perform the leaf miner test by holding the leaves up to the sun, you will find frass and larvae between the upper and lower epidermis.

Control: The effect of the mines is usually just aesthetic. Since the insect overwinters in the ground, destroying fallen leaves does not help control them. For chemical control, refer to the *Commercial Landscape and Turfgrass Pest Management Handbook 2007* (CPM) or *Home, Yard and Garden Pest Guide* (HYG).

Good website:

<http://ppdl.org/dd/id/hawthornleafminer-hawthorn.html>



Azalea sawfly

We think of this as a “holy cow” insect. One day a rhododendron looks fine and two days later, holy cow! All you can see are the mid-ribs of the leaves and half the flowers are missing! This week we found them defoliating primrose azalea (*Rhododendron* ‘Primrose’). These sawflies feed heavily on azaleas and can defoliate plants, leaving only the midribs of the leaves. The sawflies were about a third of an inch long and insatiable. The sawflies that fed on leaves were green while the larvae feeding on the red flowers were dark brown. Deciduous flame azaleas are said to be their favorite hosts, but we haven’t found much difference in host preference in the landscape.



Control: Minor infestations can be controlled by using a forceful jet of water to dislodge the sawfly larvae or by handpicking. Insecticidal soap can be used on young larvae. More severe infestations can be controlled with Neem oil or insecticidal sprays. Remember, these are sawfly larvae, not caterpillars, so the microbial insecticide *Bacillus thuringiensis var. kurstaki* (Btk) will not control them. For chemical recommendations, refer to the CPM if you are a commercial applicator or HYG from the University of Illinois if you are a homeowner.

Good website:

http://www.entomology.wisc.edu/diaglab/02hilite/5_29.html

Woolly larch adelgids

We are beginning to see woolly larch adelgids (*Adelges laricis*) on a few of our European larches (*Larix decidua*). They look like tiny white flecks. The insect covers itself with white woolly material for protection. When heavily infested, larches look like they have snow on them! When infestations are heavy, sooty mold and needle distortion develop, but usually it doesn't cause significant injury to the tree.



Control: Controls are rarely necessary as this adelgid does not cause significant harm to the tree.

Good website:

<http://www.forestpests.org/poland/larchwooly.html>

Bristly rose slug sawfly

The larvae of bristly rose slug sawflies (*Cladius difformis*) were found feeding on roses. Rose slugs are not slugs, but are a sawfly. I have to say they are quite dirty, lots of frass(poop). There are three kinds of rose slug sawflies that feed on roses, but the bristly rose slug is the most common. The larvae of all three are light green with brownish-orange heads. The bristly rose slug 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. Rose slug 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.



Feeding damage from the rose slug sawfly .

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.

See PHC Report 2007.06 (May 19 – 25, 2007) for information about other kinds of rose slug sawflies.

Good website:

<http://ces.ca.uky.edu/franklin/horticulture/2005/052205.htm>

Pine needle scale



The first generation of pine needle scale (*Chionaspis pinifoliae*) has hatched from eggs and the crawlers are feeding on white pine (*Pinus strobus*). The scales overwinter as eggs beneath a waxy, white female scale cover that looks like a white, tear-drop shaped fleck on a needle. The tiny red crawlers move to a new site on the host plant to feed. They suck juice from needles. As the crawlers develop, they secrete a white, waxy covering over their bodies. By late June or early July, they reach maturity and second generation eggs are laid. Second generation crawlers begin to appear in late July to early August. A heavy infestation will cause needles to turn yellowish brown.

One easy way to find scale crawlers is to put double-sided tape on each side of colonies of adult scales before egg hatch. When the crawlers hatch, you can see them stuck on the tape.

Heavy infestations can give trees a flocced appearance. After multiple years of severe infestation, branches, and sometimes trees, can be killed. Pine needle scale prefers Scots and mugo pines and occasionally infests Austrian, white, and red pines.

Control: Several species of ladybird beetles and parasitic wasps are important natural predators of this scale. Insecticidal sprays and soaps are effective only when crawlers are active. Use insecticidal soap instead of a chemical spray as the latter will more readily kill natural predators and beneficial insects. For chemical control, refer to the (CPM) if you are a commercial applicator or (HYG) from the University of Illinois if you are a homeowner.

Good websites:

<http://ohioline.osu.edu/hyg-fact/2000/2553.html>

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

Imported willow leaf beetle



We are finding the imported willow leaf beetle (*Plagioderia versicolora*) larvae and adults feeding on the leaves of bluestem willow (*Salix irroata*). 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 a 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.ext.vt.edu/departments/entomology/factsheets/willbeat.html>

Maple petiole borer

One of our plant clinic volunteers has an infestation of maple petiole borers on a sugar maple (*Acer saccharum*). This time of year, when a sugar maple suddenly drops a lot of leaves, it may be due to injury to the petioles by tiny wasps. The petioles on the fallen leaves have a darkened area at the base, but the fallen leaves are still green. In midspring adults lay eggs near the base of maple petioles. The resulting borer larvae hatch and bore the inside of the petioles. This weakens the stems and when the wind blows, the leaves fall off with the larvae usually remaining in the part of the petioles that remains on the tree. Eventually the rest of the petiole falls off the tree with the larvae in it (whoey that must be quite a ride!). The larvae leaves the petiole stem and tunnels into the soil where it pupates until the following spring.



Sudden leaf drop from the maple petiole borer.

No control is necessary. Leaf drop is rarely more than 20 percent of the canopy. A healthy tree can lose a significant number of leaves without harm.

Good website:

<http://www.ca.uky.edu/entomology/entfacts/ef405.asp>

Dogwood sawfly



The dogwood sawfly (*Macremphytus tarsatus*), has been found feeding on bloodtwig dogwood (*Cornus sanguinea*). It can be a significant pest to the dogwood (*Cornus*) species. The wasp-like adult sawfly lays eggs that hatch into larvae, they take on several forms while in the larval stage, which can make them hard to identify. The first instar is an almost translucent yellow. Look for groups of these larvae on the undersides of leaves that are being skeletonized. The second instar appears to be covered with a chalky powder, and the last instar is a one inch long, creamy-yellow larva that has a shiny black head and black spots. The sawflies pupate in the spring, and the adult sawflies emerge, mate, and lay eggs from May to July. There is one generation per year.

leaves. However, the larger final instar can consume entire leaves, leaving only the tougher leaf midribs. Mature larvae wander about seeking soft or decaying wood in which to hibernate. They will sometimes bore into siding or wooden lawn furniture.

Control: Handpick and destroy the larva. For chemical recommendations, refer to the CPM if you are a commercial applicator or HYG from the University of Illinois if you are a homeowner.

Good websites:

<http://woodypests.cas.psu.edu/FactSheets/InsectFactSheets/html/DogwoodSawfly.html>

www.entomology.umn.edu/cues/Web/105DogwoodSawfly.pdf

Dutch elm disease



Many people think there are no American elms left, but many of the older suburbs such as Evanston, Elmhurst, and Hinsdale still have quite a few. Numbers lessen each year, thanks to Dutch elm disease, which is again rearing its ugly head on our grounds, as well. This week we found a new Dutch elm disease (DED) infection on an American elm (*Ulmus americana*), which probably spread via root grafts from a tree infected by DED last year. DED is caused by two closely related species of fungi: *Ophiostoma ulmi* (formerly known as *Ceratocystis ulmi*) and *O. novo-ulmi*. The American elm is extremely susceptible and the disease has killed hundreds of thousands of them across the U.S. All native elms are susceptible, Asian elms are resistant and European elms are more or less in between.

Symptoms of new DED infections are yellowing, curling, and wilting leaves on outer branches in the canopy. This is called “flagging.” When the bark is removed, brown streaks can be found in the outer wood. The fungus grows beyond the visible streaks and can rapidly spread to the trunk and kill the entire tree.

“Flagging” on an elm tree.

There are two insect vectors responsible for transmitting DED: the native elm bark beetle (*Hylurgopinus rufipes*) and the European elm bark beetle (*Scolytus multistriatus*). The beetles carry the fungus to healthy trees as they feed on twigs and upper branches. Spores can enter the tree through the feeding wounds. The fungus causes the xylem to plug up and the tree to wilt and die. Beetles eventually lay their eggs in the bark of infected trees and tunneling larvae become coated with the fungus. The larvae continue the cycle by emerging as adults to feed on the healthy elms with the fungus on their bodies. The beetles typically have multiple generations per year in the Midwest and are present from late April through September.

DED can also be transmitted through root grafts. A network of roots allows the disease to move freely from one elm tree to the next and can result in a whole stand or parkway of elms becoming infected. Root grafts between trees are especially prevalent in cramped urban and suburban parkways.

Control: Monitoring and sanitation are crucial to controlling DED. Elms should be inspected for flags weekly from now through July and every few weeks through September. If a tree is newly infected, pruning may successfully eradicate the disease if no more than 5%–10% of the tree shows symptoms or at least seven to ten feet of clear wood occurs between the streaking and the main trunk. A final pruning cut, 7–10 feet beyond the streaks, is necessary to ensure the fungus is removed. Sterilize pruning tools between cuts with 70% alcohol or a similar disinfectant. If a tree shows many flags or completely wilts, it must be removed quickly so that beetles and root grafts do not transmit the disease further. Root grafts should be severed before removal of a diseased tree. Girdling the tree by removing the bark/cambium in a strip near the base of the tree can be done temporarily before removal. Potential elm bark breeding material, such as elm logs and stumps with intact bark, should be chipped and destroyed or, at the very least, stripped of bark.

There are several options for preventing Dutch elm disease. Valuable elms can be injected with a fungicide. A new biocontrol tool, Dutch Trig™, is also available. Neither Dutch Trig nor fungicides are 100% effective. For further information about systemic fungicides, refer to the CPM.

Plant resistant elm varieties: the Asian elms, lace bark elm (*U. parvifolia*), and Siberian elm (*U. pumila*) are highly resistant to the disease, though Siberian elm is considered to be a weedy, weak-branched tree. The Morton Arboretum has bred several excellent elms named ‘Triumph’, ‘Accolade’, and ‘Commendation’, available through Chicagoland Grows. Since they are hybrids of resistant Asian elms, they are also resistant to DED.

Good websites:

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

<http://www.ag.uiuc.edu/~vista/abstracts/a647.html>

Fire blight



Fire blight has infected pear (*Pyrus pyraster*) on our grounds. Fire blight is a serious disease of all plants in the rose family and is caused by the bacterium *Erwinia amylovora*. Common symptoms are blossom and shoot blight. Branches are described as looking as though they were burned, thus the name fire blight. Blossoms, leaves, and shoots wilt, turn dark brown, and look water-soaked. Leaves usually persist and succulent shoots that become infected frequently form what looks like a “shepherd’s crook.” Fire blight infections move rapidly from the blossoms into branches and trunks, causing cankers. The cankers enlarge and may girdle a tree during the growing season.

Clear, or sometimes milky, ooze often exudes from fissures on infected shoots and canker margins. The presence of ooze seems to depend on weather conditions. Fire blight bacteria overwinter in canker margins and buds. In spring, bacteria resume division when temperatures rise above 65 degrees. Rain, heavy dews, high humidity, and vigorous tree growth favor the disease. Frequently trees that are heavily pruned and have a lot of subsequent succulent new growth become infested. The bacteria are spread in droplets of ooze carried by pollinating insects, rain, and pruning tools.

Control: It is critical to respond quickly to this disease by removing infected limbs or the entire tree as the disease rapidly spreads. Prune blighted stems during dry weather as soon as they are spotted. You may have to remove the entire tree. Make pruning cuts at least six inches below infected areas and sterilize pruning tools with 70% alcohol, or a similar disinfectant, between cuts. Longer term management requires avoiding crowded plantings, heavy pruning, and high nitrogen fertilizers that can increase succulent growth. Copper-containing chemicals are effective protectants against fire blight. There are other systemic options. Refer to the CPM if you are a commercial applicator or the HYG if you are a homeowner. Trees planted in soils with poor drainage have greater susceptibility to fire blight. Choose well-drained planting sites and plant resistant varieties of *Rosaceous* plants. According to Pennsylvania State University and Cornell University the following trees are resistant:

Plant resistant varieties such as:

Crabapple, *Malus* 'Indian Summer'*, 'Jewelberry', 'Liset' *, 'Red Baron', 'Selkirk', and 'Sentinel'

Firethorn, *Pyracantha coccinea* 'Mojave', 'Navaho', 'Teton', and 'Shawnee'

Cotoneaster, *Cotoneaster anoenus*, *C. adpressus*, *C. canadensis*, *C. dammeri* var. *radicans*, *C. microphyllus*, *C. praecox*, and *C. zabelii*

Hawthorn, *Crataegus crus-galli*, *C. phaenopyrum*, *C. punctata* 'Ohio Pioneer', *C. viridis* 'Winter King'

*Also shows resistance to apple scab.

Good websites:

<http://www.ag.uiuc.edu/~vista/abstracts/a801.html>

<http://www.extension.umn.edu/yardandgarden/ygbriefs/p223fireblight.html>

<http://ohioline.osu.edu/hyg-Fact/3000/3002.html>

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. 1995 and 1998 were especially "bad" scab years because of the wet and mild March, April and May. Scab severity is much less during dry springs.

Control: The best way to avoid apple scab is to plant resistant varieties (table 1). 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/res/CLINIC_dis_appleScab.pdf. 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.

Table 1. 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://www.ag.uiuc.edu/~vista/abstracts/aAPPSCAB.HTML>

<http://ohioline.osu.edu/hyg-fact/3000/3003.html>

Powdery Mildew

Powdery mildew is appearing on the leaves of Diablo ninebark (*Physocarpus opulifolius* 'Monlo') and currant (*Ribes* sp.). Hundreds of plant species are susceptible to powdery mildew, but the disease is caused by many different fungal species and is host specific. This means that the powdery mildew on coralberry will not infect lilacs and so forth.

Powdery mildew appears as a superficial white to gray coating over leaf surfaces, stems, flowers, or fruits of affected plants. Initially, circular powdery white spots appear. These spots coalesce producing a continuous patch of "mildew." Later in the season, cleistothecia (fungal fruiting bodies that look like black pepper under a hand lens) will appear. Warm days and cool nights favor this fungal disease. This disease is one of the few that is deterred by free water since spores will not germinate in free water on leaves. However, the disease still needs high humidity to infect the plant.

Leaf curling

and twisting result, and in severe infestations you may see premature defoliation and deformed flower buds. Although unsightly, powdery mildew is usually not fatal in the landscape.



Control: Infected plant parts should be removed as soon as symptoms appear. Dispose of fallen leaves and do not handle plants when foliage is wet. Water plants during periods of drought to keep them healthy. High humidity can increase disease severity so avoid overhead watering in late afternoon or evening. Plant ninebark in locations where there is good soil drainage and sufficient sunlight. Provide proper plant spacing for good air circulation. Powdery mildew on some plants can result in significant damage and fungicides may be needed. To obtain optimum results, spray programs should begin as soon as mildew is detected. For chemical recommendations, refer to the CPM or HYG. In the future, plant resistant cultivars and species.

Good websites:

<http://ohioline.osu.edu/hyg-fact/3000/3047.html>

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

Cedar quince rust



Cedar quince rust caused by the fungus, (*Gymnosporangium claviceps*) is appearing on Chinese hawthorn (*Crataegus pinnatifida*). We are seeing pink-orange swellings and projections on flowers. Quince rust does not infect foliage. Instead, flowers, fruit, stems and spurs of hawthorns and several other hosts are infected. Hosts include hawthorn, quince, mountain ash, chokeberry, cotoneaster, pear, and serviceberry. As discussed in previous PHC reports, all three cedar rusts spend part of their life cycle on junipers and part on plants in the rose family. The fruiting structures developing now (aecia) will eventually release spores in the summer-fall that can only infect junipers. Telia will then develop on the juniper host, but will not release spores for two springs. Unlike the cedar-apple gall that is viable for only one year, the cedar quince cylindrical galls and cankers on both hosts remain active for several years.

Control: Quince rust causes branches to be girdled and trees of both hosts to decline over time. Prune out infected branches and cankers and do not plant alternate hosts side by side. Unfortunately, most hawthorns are susceptible to quince rust. However, at the Arboretum we have found recently that there is individual variability in susceptibility among trees grown from seed. A protectant fungicide application or two can help the rosaceous host if timed to when succulent twigs and branches are first developing and when galls on juniper are gelatinous (too late now). The galls do not release spore when dried up in the summer. Junipers can likewise be protected with fungicides in mid to late summer when the aecia are fully mature. Refer to the CPM or HYG for specific chemical recommendations.

Good websites:

http://www.urbanext.uiuc.edu/treeselector/detail_problem.cfm?pathogenid=8

<http://www.mortonarboretumphc.org/07/index.htm>

Rose rosette disease



Rose rosette disease has been found on some of our roses, including sweet briar rose (*Rosa rubiginosa*) and prairie rose (*Rosa arkansana*). Rose rosette disease is also known as witches' broom of rose. Rose is the only known host, but all types of roses are infected. Multiflora rose (*Rosa multiflora*) is very commonly infected (anything that helps get rid of this weedy rose is a good thing, but it's probably a source of the disease for the roses of which we're fond). Symptoms will vary depending on the kind of rose. For example, on garden roses, early symptoms include rapid stem elongation. Infected canes are much thicker and thorns are much more abundant than normal. Many short, deformed shoots form, often with red blotches on them. There are an increased number of buds and leaves are tiny and distorted. Flowers are also deformed. Early symptoms on multiflora rose include a red mosaic pattern that forms on new leaves.

Then witches' brooms (numerous red side shoots growing in different directions) begin to form. Leaves are wrinkled, stunted, and reddish green.

The cause of rose rosette disease remains unsolved. The organism is virus-like. A small eriophyid mite is a vector of the disease, although it can also be spread through grafts.

Control: Rose rosette is fatal and there is no practical control. Use healthy plants from the start. Treat the disease like a virus disease and remove and destroy infected plants, including the roots, as soon as symptoms emerge. Since multiflora rose is such a common host, don't plant it near your garden roses.

Good websites:

<http://www.ext.vt.edu/pubs/plantdiseases/450-620/450-620.html>

<http://www.ag.uiuc.edu/~vista/abstracts/a666.html>

What to Look for Next Week

Next week we will be looking for black spot on elm and euonymus scale.

Quote of the week: "There are no gardening mistakes, only experiments." -- Janet Kilburn Phillips



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.

Copyright © 2008, The Morton Arboretum
Printed on recycled paper