

Plant Health Care Report

Scouting Report of The Morton Arboretum

May 29 – June 4, 2009

Issue 2009.08

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.

Quick View

What Indicator Plants are in Bloom at the Arboretum?

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

Accumulated Growing Degree Days (Base 50):423

Insects

- Ash/lilac borer
- Alder leafminer
- Elm leafminer
- European flea weevil update
- Hawthorn leafminer
- Azalea bark scale
- Oak leaf-tier
- Redbanded leafroller
- Beech blight aphid
- Hackberry nipple gall



Diseases

- Cedar quince rust
- Cedar-hawthorn rust on hawthorn
- Phomopsis canker on kerria
- Daylily leaf streak
- Wetwood

Weed Note

- Yellow woodsorrel
- Broadleaf plantain

Degree Days and Weather Information

As of June 4, 2009, we are at 423 growing degree days which is 8 days behind the historical average (1937-2007) and 3 days ahead last year.

Location	Growing Degree Days through June 4	Precipitation between May 29 to June 4 in inches
The Morton Arboretum (Lisle, IL)	423	.56
Chicago Botanic Garden (Glencoe, IL)*	n/a	n/a
Chicago O-Hare Airport*	396	.65
Aurora, IL	378	
Champaign, IL	624.7	
DuPage County Airport (West Chicago, IL)	462.1	
Decatur, IL	661.9	
Moline, IL	519	
Peoria, IL	594.6	
Quincy, IL	686.2	
Rockford, IL	403.2	
Waukegan, IL	265.9	
Wheeling, IL	351	

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

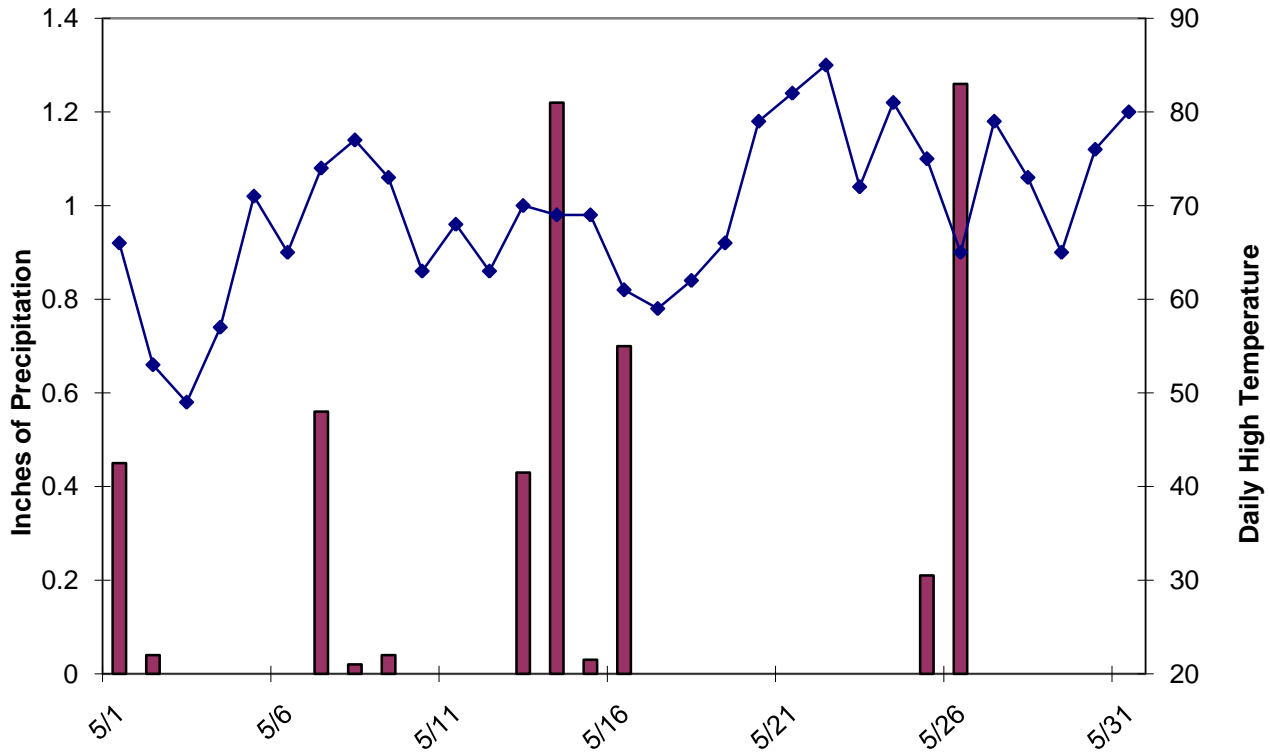
May Weather

Our May weather was only slightly cooler than the average. The average temperature was one degree cooler than our historical average (1937-2008). It was much wetter with 1.16 inches more rainfall than in the average May. The chart on the next page provides daily precipitation and temperature highs for May.

Summary of May Temperature and Precipitation Data

	May 2009
Average Daily Temperature	59.0° F
Historical Avg. Daily Temp.	60.0° F
High Temperature	85.0° F
Low Temperature	36.0° F
Total Precipitation	4.96 in.
Historical Avg. Precipitation	3.80 in.
Total Days with Precipitation	11

May 2009



This Week's Sightings

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-winged 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 1/4 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 *2007 Commercial Landscape & Turfgrass Pest Management Handbook (CPM)* if you are a commercial applicator or the *Home, Yard & Garden Pest Guide (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>



Alder leaf miner



Mines from European alder leaf miners were found on European black alder (*Alnus glutinosa*). The alder leaf miner is a sawfly. The mines begin along the midvein and continue to become much larger. To test a leaf for miners, hold the leaf up to the light. If the insect is still in the leaf, you can see it. You will also be able to see frass (insect excrement) which looks like pencil shavings within the mined area.

Control: In cases of a serious infestation, refer to the CPM or HYG for chemical control.

Elm leafminer

We are seeing mines of elm leafminers (*Kaliopfenusa ulmi*) in leaves of Scots elm (*Ulmus glabra*). Adults emerged in spring to lay eggs in elm leaf tissues. Susceptible elms include the American elm (*Ulmus americana*), English elm (*Ulmus procera*), and Armenian elm (*Ulmus elliptica*). After about a week, the eggs hatch and young larvae begin to make mines in the leaves. This is what we are seeing now. The mines at first look like u-shaped brown spots between veins in the leaf. The sawfly larvae feed on the leaf tissue between the upper and lower epidermis of the leaves. Eventually the insects will eat a hole through the leaf epidermis, fall to the ground, and excavate a hole in the soil to overwinter. They spend most of their life cycle burrowed about an inch in the ground. Severe damage can result in defoliation.



Control: We are unaware of any nonchemical control. Since they only have one generation, leaves that emerge later will not be infested.

Good website:

http://ohioline.osu.edu/sc157/sc157_6.html

European elm flea weevil update

We saw the adult stage of this insect feeding on many elms (*Ulmus spp.*) leaves a few weeks ago, creating many holes in leaves. The adult female cuts a cavity into the mid-vein of the leaf and inserts an egg. The hatching larva creates blotch mines starting at the leaf tips. The leaves almost look scorched. Larvae feed for about 2-3 weeks and then pupate within the mined leaf. See PHC report May 1 – May 7 (2009.04) for more information on the European elm flea weevil.



Hawthorn leafminer



We saw mines created by hawthorn leafminers (*Profenusa canadensis*) on leaves of frosted hawthorn (*Crataegus pruinosa*). The hawthorn leafminer 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 leafminers. When the mines are larger, the leaves will almost look blighted.

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 CPM or the HYG.

Good web site:

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

Azalea bark scale

Adults of azalea bark scale (*Erlococcus azaleae*) were found on primrose azalea (*Rhododendron* 'Primrose'). The adult females are approximately one eighth of an inch long and covered with a white waxy protective coating. They resemble small mealybugs but are nearly always found at branch crotches. If you squash them, you can see that they are actually red. Females feed on twigs and stems. The feeding sometimes causes chlorosis (yellowing) of the leaves. Branch dieback may occur in heavy infestations. This scale creates honeydew. Leaves and twigs are often covered with sooty mold, which is a dark saprophytic fungus (fungi that lives on dead stuff, not on living organisms) that grows on the honeydew.

Azalea bark scale overwinters as immature females. As the females mature in spring, they secrete white, waxy threads which become matted into a thick covering over their entire body. The crawlers, which are reddish-pink and extremely tiny, emerge predictably at approximately 850 to 1,100 GDD and tend to settle in bark crevices and branch crotches, using their piercing, sucking mouthparts to feed on plant sap.



There is probably only one generation a year in this area. Common hosts are rhododendron, hawthorn, poplar, and willow.

Control: Prune out dead or dying infested plant parts. The “pick and squish” method can be applied to adult scales before the crawlers hatch. Severely infested branches and twigs can be pruned out. Apply dormant oil during winter or use an insecticidal crawler spray in summer after all the crawlers have hatched. Beneficial insects (e.g., ladybird beetles and parasitic wasps) help control these pests, so use insecticides sparingly and only if less toxic means seem to be ineffective. Note that some summer and dormant oils may be toxic to azaleas. Also, oils should not be used on plants under drought stress or during excessive heat and humidity conditions. For further information about chemical control and timing, refer to the CPM and HYG. Always follow label directions.

Good web sites:

http://ipm.ncsu.edu/AG189/html/azalea_bark_scale.HTML

<http://www.hort.uconn.edu/Ipm/homegrnd/htms/43rhodo.htm>

Oak leaftier



The larva of the oak leaftier (*Croesia semipurpurana*) has been found on the white oak (*Quercus alba*). The leaftier in a serious infestation can be an early defoliator of many oak trees. The eggs overwinter on oak branches and hatch in the spring. The full-grown larvae are dirty white to light green with black bars on the sides of its pale head capsule. Newly hatched larvae feed in unopened or recently opened buds in April and early May. Older larvae feed on open leaves tied together with silk. In late May the mature larvae spin down to the ground and pupate in the soil litter for one to two weeks. Only one generation per year has been reported.

Control: Spray should be applied now. For more information, refer to the CPM or HYG.

Good web sites:

<http://www.forestpests.org/northeast/oakleaftier.html>

http://www.na.fs.fed.us/spfo/pubs/pest_al/oakleaf/oakleaf.htm

Redbanded leafroller

The larva of the redbanded leafroller (*Argyrotaenia velutinana*) has been found on wild sweet crabapple (*Malus coronaria*). Eggs are laid on the undersides of leaves, are a yellowish cream color and bonded together to form a small mass. The larvae are small, from one sixteenth of an inch to five eighths of an inch long. Its body is a pale yellow to green color. Its head and thoracic shield (the plate on the back of the head) are straw-colored or the same color as the body. Adult moths are about one half inches long, light brown in color, with a reddish-brown irregular band across the front wings. Pupae overwinter in soil litter.

Redbanded leaf roller larvae fold and web leaves together. They skeletonize leaves as they feed from the underside. Developing fruit is left deformed by the irregular shallow cavities made by the feeding leafrollers. The redbanded leafroller feeds on a variety of plants including fruit trees, vegetables, weeds, flowers, ornamental trees and shrubs.

Control: None required as leafrollers usually cause minimal damage. If infestation levels are high and serious damage imminent, refer to the CPM or the HYG.

Good web sites:

<http://www.nysipm.cornell.edu/factsheets/treefruit/pests/rblr/rblr.asp>

http://www.oardc.ohio-state.edu/grapeipm/redbanded_leafroller.htm



Beech blight aphid

Small masses of the beech blight aphids (*Grylloprociphilus imbricator* (Fitch)) have been found on leaves of the American beech (*Fagus grandifolia*). Aphids are small (about one twelfth of an inch long) and are identified by their sucking mouthparts, long, thin legs, long antennae, pear-shaped body, and pair of tube-like structures (called cornicles) emerging from their abdomen. These aphids, just like the woolly alder aphids, produce a waxy substance that covers its body, making them look like they are covered with wool (for being an aphid they are quite pretty). Colonies of the beech blight aphid have a fascinating defense mechanism; they raise the posterior end of their body and sway it. It looks like they're dancing!



Control: They do little damage. Usually high winds, rain, predators like the harvester butterfly larva (*Feniseca tarquinius*), and wasp parasites keep this species under control.

Hackberry nipple gall



Nipple galls, caused by the hackberry nipple gall psyllid (*Pachypsylla celtidismamma*), are forming on leaves of hackberry (*Celtis occidentalis*). The galls begin as small round bumps. The adult female psyllids lay eggs on the underside of the leaves. When the eggs hatch about a week later, the plant grows tissue around the nymphs in response to the feeding of the insect. Inside the gall resides a tiny yellow to orange psyllid nymph. Nymphs grow larger and emerge from the galls as adults in September. Hackberry is the only known host of this psyllid. The psyllids are also called jumping plant lice because of their ability to jump. Hackberries frequently get nipple galls. The damage is not considered serious.

Control: Keep trees healthy and vigorous by keeping them mulched and watering during drought periods. Several parasites help control psyllids.

Chemical control is usually not warranted.

Good web sites:

http://www.oznet.ksu.edu/dp_hfrr/extensn/problems/hackgall.htm

http://www.ipm.uiuc.edu/landturf/insects/hackberry_psyllids/index.html

Cedar-quince rust

Cedar-quince rust caused by the fungus *Gymnosporangium claviceps* is appearing on Washington hawthorn (*Crataegus phaenopyrum*). 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



Cedar-quince rust on hawthorn fruit

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

Cedar-hawthorn rust on hawthorn

Bright orange cedar-hawthorn rust spots are appearing on Washington hawthorn (*Crataegus phaenopyrum*). As the spots age, they become swollen and aecia, the cup-shaped fruiting bodies produced by rust fungi, will form on the underside of the leaves. Aeciospores will be released from these structures during the summer and infect junipers, the alternate host. The spores produced on hawthorn do not re-infect hawthorn. Cedar-hawthorn rust is also a disease of apple, crabapple, mountain ash, and pear trees.



The first orange spots of cedar-apple rust were found on leaves of wild sweet crabapple (*Malus coronaria*). As with the cedar hawthorn rust, these spots swell, aecia form, and aeciospores are released and infect nearby junipers later in the season.

Control: See PHC report May 1 – May 7(2009.04) for information, including a list of resistant plants. It is too late to prevent current season leaves from becoming infected. Information about fungicides to use next year for trees that are severely infected is available in the CPM or HYG.

Phomopsis canker on kerria



Stem cankers caused by the fungus *Phomopsis japonica*, was identified on a sample of Japanese kerria (*Kerria japonica*) brought in to the Plant Clinic. This has been a common problem on kerria for several years that has resulted in the demise of a lot of kerria in the Chicago area. Cankers on branches vary in size and appear as discolored areas. Branches girdled by the cankers wilt and die. The cankered areas may crack exposing black fruiting bodies.

Microscopic spores (conidia) are produced in large

numbers during extended periods of wet weather. *Phomopsis* is spread by splashing water, insects, and mechanically (pruning, wounds). This fungus overwinters in cankers as mycelia and pycnidia.

Control: Prune stems four to six inches below diseased tissue.

Good web site for pictures:

<http://www.forestryimages.org/browse/hostimages.cfm?sub=11556>

Daylily leaf streak

Brown streaks with yellow haloes along the mid-vein were found on leaves of strawberry candy daylilies

(*Hemerocallis* 'Strawberry candy').

This is called daylily leaf streak and is caused by the fungus *Colletotrichum dematium*. This is a common daylily problem that usually starts near the leaf tips. This is not the same as daylily rust, which is a much more serious disease.



Control: Cultivars vary in their susceptibility. Infected leaves should be removed. Give plants plenty of air circulation and avoid overhead watering.

Wetwood

We're seeing wetwood (also known as slime flux) fluxing on Moline American elm (*Ulmus americana* 'Moline'). This is a bacterial disease usually associated with elms and poplars, although it occasionally affects maples, mulberries, and oaks. 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 liquid waste products through openings and weak points in the tree. 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, yeasts, and fungi that sometimes results in an orange slime.

Control: 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 is still recommended by some, but probably doesn't help much. Dead and weak branches should be removed. Bacteria are easily transmitted by tools so disinfect tools with 70% rubbing alcohol, dilute Pinesol, or similar disinfectant before pruning another tree.



Good web sites:

<http://www.ext.colostate.edu/PUBS/GARDEN/02910.html>

Weed Note

Yellow woodsorrel (*Oxalis stricta*)

Yellow woodsorrel is a cool season perennial, but may also grow as a summer annual. This plant forms small erect bushy clumps that grow up to 20 inches tall. Pale green leaves form in groups of three leaflets on long petioles. They are often mistaken for white clover or black medic. You can identify yellow woodsorrel from the others by its deeply indented heart-shaped leaflets which measure up to four fifths of an inch across. This weed blooms in May through September. Yellow five-petaled flowers measuring up to one half inch across are borne in clusters at the end of the stems. Yellow woodsorrel has a spreading habit with a shallow tap root and a secondary fibrous root system. It spreads by seeds which burst from mature one half to one inch long pointed seed pods. Seeds can be projected several feet.

Control: Yellow woodsorrel can be difficult to control. Mechanically remove or hand pull. Apply a pre-emergence herbicide before germination in the spring. Apply a spot treatment of an herbicide like glyphosate (Roundup®) to the foliage of individual plants during the growing season. Use caution when using Roundup®. It is a non-selective herbicide and will kill both desirable and undesirable plants. For further information about chemical control and timing, refer to the CPM if you are a commercial applicator in Illinois or the HYG if you are a homeowner.



Photo of yellow woodsorrel taken by
John Hagstrom



Leaves of white clover



Leaves of black medic

Broadleaf plantain (*Plantago major*)

The broadleaf plantain is a cool season perennial. Leaves form in a basal rosette and grow up to ten inches long. They are oval-shaped with prominent veins that run parallel to leaf margins. Leaf margins are untoothed and can sometimes be wavy. The petioles (the small stalk attaching the leaf blade to the stem) are often a purple-red color. Numerous tiny white petaled flowers are produced on unbranched stalks that are eight to twenty inches tall. Bloom time is from May through September. This weed reproduces by seed.



Control: Mechanically remove or hand pull. Apply a post-emergence herbicide from mid spring to early summer and/or mid to late fall. A pre-emergence herbicide can be applied before seed germination. For further information on chemical control, refer to the University of Illinois CPM or HYG.

What to Look for Next Week

We will be looking for powdery mildew, black spot on elm, and woolly larch adelgid.

Quote of the week: “Dirty hands, iced tea, garden fragrances thick in the air and a blanket of color before me, who could ask for more?” - Bev Adams, *Mountain Gardening*



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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