

Plant Health Care Report

Scouting Report of The Morton Arboretum

May 3 - 9, 2008

Issue 2008.04

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.

Everything is greening up so nicely with the warm weather and rains. Along with spring comes the birth of insects and disease. So, always remember that your good gardening cultural practices and a watchful eye are the best weapons to ward off insects and diseases in your yard.

For all the Mom's out there, Happy Mother's Day!!

Quick View

What Indicator Plants are in Bloom at the Arboretum?

Koreanspice viburnum (*Viburnum carlesii*) is in full bloom.

Accumulated Growing Degree Days (Base 50): 173.5

Insects

- Ash plant bug
- Honey locust plant bug
- Boxwood psyllid
- Pine bark adelgid
- Spittle bug
- Eastern tent caterpillar
- Spindle leaf gall on Linden
- Spindle leaf gall on Prunus
- Elm bark beetle



Diseases

- Cedar rusts

Miscellaneous

- Frost cracks

Degree Days and Weather Information

As of May 8, 2008, we are at 173.5 growing degree days. The historical average (1937-2007) for the same date is 210. Last year we were at 257.0 growing degree days on May 8.

Location	Growing Degree Days through May 8	Precipitation between May 2 to 8 in inches
The Morton Arboretum (Lisle, IL)	173.5	1.79
Chicago Botanic Garden (Glencoe, IL)*	157.5	1.87
Chicago O-Hare Airport*	161.0	0.96
Aurora, IL	170.0	
Bloomington, IL	214.5	
Champaign, IL	231.0	
DuPage County Airport (West Chicago, IL)	182.5	
Midway Airport	201.5	
Danville, IL	292.5	
Decatur, IL	259.5	
DeKalb, IL	174.0	
Moline, IL	211.0	
Palwaukee Airport (Wheeling, IL)	164.0	
Peoria, IL	248.5	
Peru, IL	253.0	
Pontiac, IL	211.0	
Rantoul, IL	262.5	
Rockford, IL	182.0	
Romeoville, IL	191.5	
Springfield, IL	256.0	
Waukegan, IL	103.0	
Madison, WI	136.5	
Milwaukee, WI	89.5	

**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

Ash Plant Bug

Ash plant bug (*Tropidosteptes* sp.) nymphs have recently hatched and are feeding on ash leaves (*Fraxinus* sp.). The nymphs are pale green with red eyes and a gray spot in the middle of their backs. Adult ash plant bugs range in color from pale green to nearly black and are about one fifth of an inch long and one tenth of an inch wide. Both nymphs and adults feed on the undersides of leaves causing a yellowish-white stippling on the upper leaf surface that may coalesce to form broad areas that turn brown. You also may see premature leaf drop or deformation/dwarfing of young leaves. Black specks of excrement (poop) can be seen on leaf undersides.



Ash plant bugs overwinter as eggs under loose bark and in crevices of host twigs. The eggs hatch shortly after buds open in the spring. Nymphs begin feeding immediately on the new shoots, petioles, and developing leaves. Within 3 to 4 weeks, the nymphs mature, mate, and the females lay eggs in small holes they have drilled into small twigs. Eggs hatch in about 1 week and the second generation feeds from early summer until the first hard frost. Eggs laid in July and August hatch the following spring.

Control: Ash plant bugs damage individual leaves but generally do not threaten the health of mature trees. Therefore, it is best to tolerate the damage.

Good websites:

<http://www.extension.umn.edu/projects/yardandgarden/ygbriefs/e449plantbugs-ashhnylcst.html>

<http://learningstore.uwex.edu/pdf/A3126.pdf>

<http://www.entomology.umn.edu/cues/Web/066AshPlantBug.pdf>

Honey locust plant bug

Honey locust plant bug nymphs are starting to feed on newly-emerging honey-locust leaves (*Gleditsia triacanthos*). The easiest way to find these and other plant bugs is to shake a branch over a white piece of paper. When you see a tiny green insect crawling on the paper, look at it through your hand lens. Honey-locust plant bugs have a pair of four-segmented antennae, although the antennae are probably too small at this stage to see without a microscope. Older nymphs also have yellow spots on their backs. This plant bug overwinters as an egg under the bark of two- and three-year-old twigs. The eggs hatch soon after bud break and the nymphs crawl to unfolding leaves to feed. The insects are very small right now. In late May to early June, the plant bugs will become adults.

Both nymphs and adults feed on foliage until early summer and can cause severe leaf distortion, dwarfed leaflets, chlorosis, and yellow-brown leaf spots. A heavy plant bug infestation may cause a failure to leaf out or premature leaf drop. In the past, our heavily infested trees were able to leaf out again.



Control: Young nymphs can be knocked off leaves of small trees by spraying them with a strong stream of water. In severe infestations, insecticidal soaps, summer oils, and insecticides may be warranted. For chemical recommendations, refer to the *Commercial Landscape and Turfgrass Pest Management Handbook 2007* (CPM) for commercial applicators, or the *Home, Yard and Garden Pest Guide* (HYG) for homeowners. Resistant cultivars can be planted such as ‘Skyline’ and ‘Shademaster’. In general, yellow-leaved cultivars are more susceptible to this pest.

Good web site:

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

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 appreciate these beneficial insects.



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

Pine bark adelgid

Pine bark adelgids (*Pineus strobi*) have laid their eggs on dwarf Eastern white pine (*Pinus strobus* ‘Nana’). Adult females secrete a protective white, woolly mass, which covers the light-yellow eggs and can be found at the bases of needles and on the bark of limbs and trunks. Crawlers should begin to emerge within the next couple of weeks. The adelgid prefers white pine but also attacks Scots and Austrian pines. Healthy trees are not usually harmed by this adelgid.

Control: Eggs should be washed off now with a high-pressure water spray. Do the same to the crawlers if you see them. In severe or repeated infestations, an insecticidal spray can be applied when the crawlers are out. Lady beetles, hover flies, and lacewings feed on adelgids, so if these predators are present, it is best to use an insecticidal soap or high pressure water spray.



For specific chemical recommendations, refer to the CPM.

Good websites:

http://bugs.osu.edu/~bugdoc/Shetlar/factsheet/christmasree/pine_bark_adelgid.htm

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

<http://www.entomology.umn.edu/cues/Web/178PineBarkAdelgid.pdf>

Spittle bug



We're starting to see spittle bugs on dwarf Eastern white pine (*Pinus strobus* 'Nana'). You can identify them by the frothy white mass found on foliage and twigs. It looks like tiny areas of dish soap bubbles. The spittle, consisting of plant juices, is made by the immature bug to keep it moist and protect it from its enemies. Spittlebugs suck plant sap but inflict little damage on mature plants. There are a number of species of spittlebugs that feed on both deciduous and evergreen plants in our region.

Control: Control is rarely necessary, but according to Michigan State University, hosing the plants down forcefully with water is usually sufficient to remove most of the insects. This may need to be repeated a few times.

Good website:

http://www.oznet.ksu.edu/dp_hfr/externs/problems/SpittleBug.htm

Eastern tent caterpillar



Eastern tent caterpillars (*Malacosoma americanum*) have been found on our grounds this week. The caterpillars ultimately grow to two inches long and are hairy with white stripes down their backs and blue spots between longitudinal yellow lines (they are beautiful caterpillars). The larvae gather at a fork in a tree and build a web or "tent". They leave the web to feed during the day, but return at night. Since they create a strand of silk wherever they go, the web enlarges as the caterpillars eat. Severe defoliation only occurs when populations are high.

Eastern tent caterpillars prefer trees in the rose family, such as wild black cherry, apple and crabapple, plum, and peach, but occasionally will feed on ash, birch, willow, maple, oak, and poplar.

Control: The safest way to control the caterpillar is by tearing out or pruning out the webs. This should be done on cloudy or rainy days or at night when the caterpillars are in the nest and not out feeding. Another option is to remove the overwintering egg masses before spring if you can find them (good luck with that – we've tried it and it isn't easy). The egg masses are dark gray to black and are wrapped around twigs that are about the diameter of a pencil. *Bacillus thuringiensis* var. *kurstaki* (Bt) can also be sprayed on young larvae

but will not kill mature larvae. 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 web sites:

<http://www.ca.uky.edu/entomology/entfacts/ef423.asp>

<http://www.ag.ohio-state.edu/~ohioline/hyg-fact/2000/2022.html>

<http://learningstore.uwex.edu/pdf/A2933.pdf>

Galls



Spindle galls on little-leaf linden

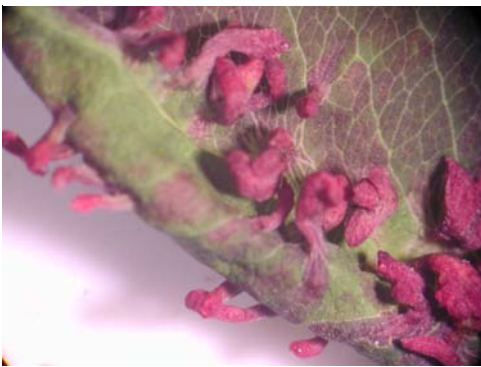
Galls are irregular plant growths that occur on leaves, buds, bark, twigs, roots, and flowers of many plant species. Most galls are caused by irritation or stimulation of plant cells due to feeding or egg-laying by insects such as mites, midges, aphids, and wasps. Some galls are the result of infection by bacteria, fungi, or nematodes.

We are finding spindle leaf galls on the leaves of little-leaved linden (*Tilia cordata*), and wild black cherry (*Prunus serotina*). The galls generally appear as small red bumps or spindle-like protrusions on leaf surfaces. They

are very interesting to look at. These particular galls are caused by eriophyid

mites that overwinter in bark crevices or wounds, scars, and pruned branches around callous growth of The mites become active in spring and migrate to feed on expanding leaf buds.

Control: Although the leaves may seem unsightly, and there may be some early leaf drop, these galls do not affect tree health so control is not required.



Spindle galls on wild black cherry

Good websites:

<http://www.extension.umn.edu/distribution/horticulture/DG1009.html>

<http://www.extension.iastate.edu/Publications/IC417.pdf>

Elm bark beetles

We caught a few adult elm bark beetles (*Hylurgopinus rufipes* and *Scolytus multistriatus*) in our pheromone trap this week and expect many more in the next few weeks. These are the bad boys that spread Dutch elm disease. The beetles are dark brown and about 1/8 inch long (smaller than a grain of rice). Everyone who sees them are amazed at their small size considering how much damage they do. The adults lay eggs in dead or dying elm trees that still have bark attached. Larvae feed under the bark of the dead or dying elm. When they emerge as adults from infected trees, the spores of the DED fungus stick to their backs. The beetles fly to the tops of healthy elms to feed and are attracted to fresh wounds. Trees are most susceptible to infection during mid-spring to early summer when they are actively growing. The beetles typically have two generations per year in the Midwest and are present continuously from late April through October.



We'll provide further updates about DED when we start seeing its symptoms, usually in early June.

Control: Begin to monitor elm canopies weekly. Rapid removal of wilting branches can save a tree. Infections from late in the season last year will begin to show soon. Stop pruning elms now to prevent attraction of elm bark beetles to wounded trees. Search out and destroy elm bark breeding sites, including piles of elm logs, standing dead elm trees, and stumps with bark attached. Remove bark and chip, compost, bury, or burn the woody material to eliminate potential breeding sites.

Plant tolerant and resistant elms. Non-native hybrid elms, such as Accolade and Triumph (both Morton Arboretum introductions) are resistant to Dutch elm disease. A biocontrol tool, Dutch Trig™, is available in Illinois and is effective as a protectant, though, like most treatments including fungicides, it is not 100% fail safe. Valuable specimen elms can be injected with one of several fungicides that have good success rates. For further information about systemic fungicides, that are probably the most reliable chemical control, refer to the CPM if you are a commercial applicator. There is no product available for use by homeowners.

Good websites about Dutch elm disease:

http://www.umassgreeninfo.org/fact_sheets/bark_beetles/elm_bark_beetle.html

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

Cedar rusts

All three cedar rusts have started sporulating on common juniper (*Juniperus virginiana*) with the spring rains that arrived. There are three main rusts on juniper: cedar-apple, cedar-hawthorn, and cedar-quince. Cedar-apple rust and cedar-hawthorn rust both form brain-shaped “galls” on junipers, with the cedar-apple rust galls being much larger than the cedar-hawthorn galls. During spring rains, gelatinous tendrils called telial horns expand from the galls. Spores are released from the telial horns as they dry and are blown to a host in the Rose family, e.g., apples, crabapples, and hawthorns. Orange leaf spots subsequently develop on the Rose family plants. Spores from the large galls, the cedar-apple rust, create orange spots on the leaves of apples and crabapples. Spores from the smaller galls, the cedar-hawthorn rust, create orange spots on hawthorn leaves.

Cedar-quince rust is not well-named. Of the three cedar rust diseases, cedar-quince rust can cause the most damage by infecting fruits and twigs on trees in the Rose family, especially hawthorns. Although cedar-quince rust spends part of its life cycle on junipers similar to cedar-apple and cedar-hawthorn rust, it does not form galls on the junipers. Cedar-quince rust appears as spindle-shaped swellings on twigs and branches of junipers. In spring, the swellings turn orange and release spores. If you get a chance to come out to the arboretum during a rainy day look at our Junipers on the conifer walk. These rusts are just amazing and don't be afraid to touch them. We will discuss symptoms on the alternate host in a later issue.

Control: The disease is usually not serious on the juniper host. Control is usually based on the tree in the Rose family. The best control is to plant resistant varieties of crabapples and hawthorns. Remember, resistance is not the same thing as immunity. Resistant does not mean that the tree will never get rust. It only means that in an average year, it is not likely to have much



Cedar-apple rust



Cedar-hawthorn rust



Cedar-quince rust

problem with the disease. In a year that is very favorable to the fungus, even “resistant” trees may show some signs of disease. Following is a list of cultivars that show resistance to rust. As many lists offer contradictory listings, we have chosen to present those trees that appear on at least two lists and that also show resistance to apple scab (crabapples):

Crataegus crus-galli
Crataegus laevigata
Crataegus pruinosa
Crataegus viridis ‘Winter King’
Malus ‘Beverly’ *
Malus ‘Bob White’ **
Malus baccata ‘David’ **
Malus ‘Dolgo’ *
Malus ‘Donald Wyman’ **
Malus ‘Indian Summer’ ***
Malus ‘Liset’ **
Malus ‘Mary Potter’ ***
Malus ‘Prairifire’ *
Malus ‘Professor Sprenger’ *
Malus ‘Profusion’ ***
Malus ‘Red Jewel’ **
Malus baccata ‘Jackii’ *
Malus sargentii *
Malus sargentii ‘Tina’ *

* also shows excellent resistance to apple scab

** also shows good resistance to apple scab

*** shows fair resistance to apple scab

It is also helpful to remove one of the two host plants or separate one host from another (be aware, spores can be blown a mile or so), and to not plant junipers near rosaceous trees. This isn’t very practical in an urban environment where there is a juniper or crabapple in nearly every yard. You can also physically remove galls from the juniper twigs. This is only effective if a few plants are infected and there aren’t a lot of galls on each plant.

Chemical control for rosaceous hosts, if used, needs to start as leaves are emerging and when the telial horns are expanding on junipers (now). For chemical recommendations, refer to the CPM if you are a commercial applicator or the HYG if you are a homeowner.

Web sites:

<http://ohioline.osu.edu/hyg-fact/3000/3055.html>

<http://www.urbanext.uiuc.edu/focus/cedarrustdiseases.html>

Frost cracks

The plant clinic has been receiving numerous reports of frost crack damage. A frost crack is a long, deep, narrow crack running up and down the trunk of a tree. The crack is usually on the south or southwest side of the trunk but can occur on any side. Frost cracks develop when the air temperature drops substantially during the dormant period. The inner part of the trunk remains relatively warm while the outer wood becomes cold and contracts rapidly, which can result in a long vertical crack at weak points in the trunk. These cracks often close and form callus tissue that appear as raised, black lines on the stem. Young trees or older trees with

smooth bark are most susceptible. Once a crack appears, nothing can be done. The wound will heal itself, but it also makes the tree more vulnerable to disease and insects.

Control:

- 1.) Avoid wounds to the trunk and properly prune branches.
- 2.) You can also protect tree trunks by wrapping them with tree wrap or burlap. The jury is still out on whether wrapping the trunk really protects the bark from frost cracks. But should you choose this method, in the fall tree wrap should start at the ground level and go all the way up to the first main branches. It is highly recommended not to leave the wrap on year round. Remove the wrap in the spring.

Good websites:

- <http://web1.msue.msu.edu/msue/iac/disasterresp/HORTICULTURE/01701142.pdf>
- <http://www.coopext.colostate.edu/TRA/PLANTS/index.html#http://www.coopext.colostate.edu/TRA/PLANTS/frostcrk.html>
- http://www.na.fs.fed.us/spfo/pubs/howtos/ht_non/non_all.htm

What to Look for Next Week

Next week we will be looking for ash anthracnose, gypsy moths, and spruce spider mite.

Quote of the week: “If I could only grow green stuff in my garden like I can in my refrigerator.” Author Unknown



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