

# Plant Health Care Report

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Scouting Report of The Morton Arboretum

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June 11, 2010

Issue 2010.09

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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 plant is in bloom at The Arboretum?**

Northern catalpa (*Catalpa speciosa*) (Figure 1)

## Weekly reminder

**What to look for in the next week**

**Accumulated Growing Degree Days (Base 50): 683**

**Accumulated Growing Degree Days (Base 30): 2365**

## This week's sightings:

### Insects

- Spiny elm caterpillar
- Earwigs
- Pine needle scale crawlers
- Larch sawfly
- Pear slug sawfly
- Sumac leaf beetle
- White-marked tussock moth
- Rose midge

### Diseases

- Powdery mildew
- Cedar quince rust on crabapple
- Cedar hawthorn rust on hawthorn

**Fungus of the week:** *Fuligo septic*

**Woody of the week:** *Magnolia virginiana*



Figure 1 Northern catalpa (*Catalpa speciosa*).  
Photo by John Hagstrom

## Degree Days and Weather Information

As of June 10, 2010, we are at 683 base 50 growing degree days (GDD), which is approximately 11 calendar days (181 GDD) ahead of 2009 at this time, and ahead of the historical average (1937-2009) by two GDD. In the past week it has rained 7.84 cm (3.09 in), 9.88 cm (3.89 in) precipitation in June, and 35.5 cm (13.98 in) for the year.

Location	Growing Degree Days through June 10	Precipitation (in) Between June 2 – 10
The Morton Arboretum (Lisle, IL)	683	3.09
Chicago Botanic Garden (Glencoe, IL)* (6/9/10)	664	1.9
Chicago O'Hare* (6/9/10)	718	0.98
Aurora, IL**	741.9	
Carbondale, IL ** (6/11/10)	1236.3	
Cahokia, IL**	1123.1	
Champaign, IL**	959.0	
Chicago Midway	809.4	
DuPage County Airport (West Chicago, IL)**	731.1	
Decatur, IL**	989.9	
Lawrenceville, IL**	1221.7	
Mattoon, IL**	1020.2	
Moline, IL**	897.1	
Peoria, IL**	948.2	
Quincy, IL**	967	
Rockford, IL**	737	
Springfield, IL**	1057	
Sterling, IL**	815.3	
Waukegan, IL**	550.9	
Wheeling, IL**	657.2	

\*Thank you to Mike Brouillard, Northbrook Park District, and Chris Henning, Chicago Botanic Garden, for supplying us with this information.

\*\* We obtain most of our degree day information from the GDD Tracker from Michigan State University web site. For additional locations and daily degree days, go to <http://www.gddtracker.net/?zip=60185&model=2&state=IL>

## Weekly Reminder:

While out working on your landscape, remove landscape rocks from around your trees. Whether they're smooth river stones or granite, the rocks are detrimental to your trees in several ways. First, they expose the roots to temperature extremes, because rocks get hotter in the summer and colder in the winter than wood mulch. They also compact the soils, which reduces the water- and air-pore spaces. Finally, as your tree grows and the stem gets bigger, the rocks can become imbedded in the stem and create wounds or girdle the stem, which often results in decline.

## What to look for in the next week:

Birch leafminer, black spot on elm, Dutch elm disease, oak wilt, Seiridium canker, Guignardia leaf blotch, smartweed caterpillar, kermes scale, azalea bark scale, and magnolia scale crawlers

**Thank you...** I would like to thank the volunteers that scouted this past week and found most of the insects and diseases that are in this report. The Scouting Volunteers include: Ann Klingele and Loraine Miranda. Your hard work is appreciated.

## This Week's Sightings...

### Spiny elm caterpillar

Spiny elm caterpillars (*Nymphalis antiopa*) (Figure 2) are feeding on the leaves of hackberry (*Celtis occidentalis*). This caterpillar is the larval form of the familiar mourning cloak butterfly (Figure 3). Mourning cloak butterflies spend the winter as adults and are frequently seen out flying on the first sunny days of early spring. The caterpillars are purplish-black with white specks and a row of orange to red spots along the back with branched spines circling the body, and ultimately grow to 5.1 cm (2 in) long at maturity. They often feed in large groups. It is common for these caterpillars to defoliate one branch first before moving to the next one. Spiny elm caterpillars prefer to feed on the leaves of elm and willow, but you may also find them on a variety of other hardwood trees including birch, hackberry, sugarberry, linden, cottonwood, and poplar. There are two generations per year.

**Control:** Although common, these caterpillars usually do not develop in high enough numbers to cause much damage. Numerous parasites and predators, including parasitic wasps and some birds, help keep spiny elm caterpillar populations under control. *Bacillus thuringiensis* var. *kurstaki* (Btk) is effective against young larvae, but is not as effective against older larvae.

**Suggested reading:** <http://www.extension.umn.edu/yardandgarden/YGLNews/YGLN-May1505.html#mcloak>  
<http://www.ipm.iastate.edu/ipm/hortnews/2010/5-26/update.html>



Figure 2 Spiny elm caterpillars (*Nymphalis antiopa*)



Figure 3 Mourning cloak butterfly

### Earwigs

Earwigs (Figure 4) have been found on the Arboretum grounds this week. Earwigs generally feed on dead insects and rotting plant material; however, they are also known to feed on flowers, fruit, and foliage of vegetable, fruit, ornamental, and field plants when populations are numerous. Their feeding causes small, irregular holes, and can give foliage a ragged appearance in severe infestations. This insect, which is about an inch long, is easily identifiable by the prominent pair of pincers on the tip of the abdomen. Earwigs are nocturnal creatures and hide in dark, moist places under stones and in debris or sometimes in bark during the day. They may find their way into houses and garages—particularly during periods of prolonged warm, dry weather and in fall. Inside they seek out moist areas such as basements, crawl spaces, and kitchens where they feed on sweet, oily or greasy foods, in addition to houseplants.

Since they feed on insect larvae, they are considered beneficial, but they are not beneficial to humans if you sit on one and get pinched. The difference between male and females are that the pinchers of females are nearly straight; on males they are caliper-like.



Figure 4 A male earwig

**Control:** Removing plant debris from your garden will remove some of their hiding places. Place rolled up newspapers on the ground near problem areas. Check the “newspaper traps” in the morning for earwigs. Shake the earwigs into a pail of

soapy water. For indoor control, eliminate damp conditions in crawl spaces, near faucets, around air-conditioning units, and along house foundations. Keep moist mulches three feet away from the house foundation, window wells, and doorways, if you have a serious earwig problem. Trim back vegetation and remove ground covers near foundations that contribute to moisture retention. Move log piles away from the house. For chemical control, refer to the *Commercial Landscape and Turfgrass Pest Management Handbook 2010* (CPM) or *Home, Yard and Garden Pest Guide* (HYG).

**Suggested reading:** <http://learningstore.uwex.edu/pdf/A3640.pdf>  
<http://ipm.illinois.edu/hyg/insects/earwig/index.html>

## Pine needle scale crawlers

The first generation of pine needle scale (*Chionaspis pinifoliae*) (Figure 5) have 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 flocked 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 or HYG.

**Suggested reading:** <http://ohioline.osu.edu/hyg-fact/2000/2553.html>  
[http://woodypests.cas.psu.edu/FactSheets/InsectFactSheets/html/Pine\\_Needle\\_Scale.html](http://woodypests.cas.psu.edu/FactSheets/InsectFactSheets/html/Pine_Needle_Scale.html)

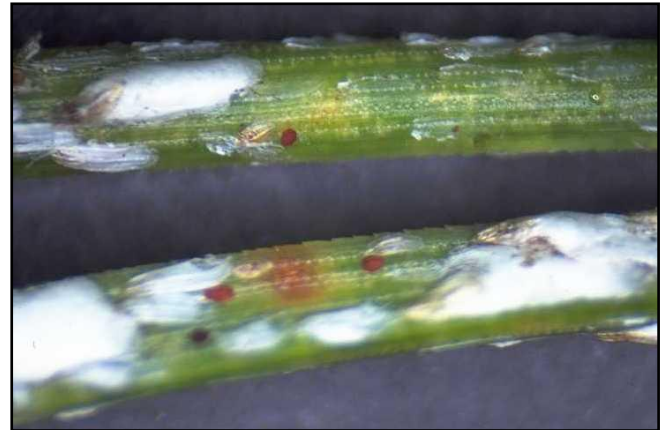


Figure 5 pine needle scale (*Chionaspis pinifoliae*) females and crawlers

## Larch sawfly



Figure 6 Larch sawfly (*Pristiphora erichsonii*) larvae

Larch sawfly (*Pristiphora erichsonii*) (Figure 6) larvae were found on the needles of Prince Rupprecht Dahurian larch (*Larix gmelinii* var. *principis-rupprechtii*). The larvae have black heads, gray-green bodies and are 16 mm (about 1/2 inch) long when fully grown. They feed in colonies on tufts of needles and are very obvious when present. Defoliation is rarely complete. Repeated heavy feeding can cause thin foliage and reduced growth. All species of larch are susceptible to attack.

Larch sawflies overwinter as pupae in the ground and adults emerge in mid-spring. The female cuts a double row of slits along one side of an elongating shoot and deposits eggs. The egg slits damage the shoot causing it to curl. While these slit needles will continue to grow,



they develop a curliness that is characteristic of larch sawfly damage.

**Control:** Minor infestations can be controlled by using a forceful jet of water to dislodge the sawfly larvae or by handpicking. These mechanical controls should be done now. Severe infestations can be controlled with insecticides such as acephate and carbaryl. Insecticides are most effective when used on young sawfly larvae. For chemical control, refer to the CPM or HYG.

**Suggested reading:** <http://www.extension.umn.edu/distribution/horticulture/DG6703.html>  
<http://www.fs.fed.us/r10/spf/fhp/leaflets/Larsaw.htm>

### Pear slug sawfly

Pear slug sawfly (*Caliroa cerasi*) larvae were found feeding on low serviceberry (*Amelanchier humilis*). The pear slug sawfly overwinters in the ground as a pupa about 5.1 cm (2 in) below the soil surface. Adults emerge in mid-spring, mate, and females lay eggs in slits made in the leaf. After one to two weeks the eggs hatch and larvae begin feeding on bottom epidermal layer, leaving the upper surface intact. The skeletonized leaves have a “window pane” appearance (Figure 7). The injured leaf tissue quickly turns brown and heavily damaged leaves drop prematurely.

Immature pear slug sawfly larvae are greenish black and slimy, and, when fully grown, are yellow and about 13 mm (1/2 inch) long.



Figure 7 Skeletonized leaves from pear slug sawfly feeding on shadbush

**Control:** Minor infestations can be controlled by using a forceful jet of water to dislodge the sawfly larvae or by handpicking. Severe infestations can be controlled with insecticides such as acephate and carbaryl. Insecticides are most effective when used on young sawfly larvae.

**Suggested reading:** <http://www.extension.umn.edu/distribution/horticulture/DG6703.html>

### Sumac leaf beetle

The larval stage of sumac leaf beetles (*Blepharida rhois*) (Figure 8) are feeding on smooth sumac (*Rhus glabra*) foliage and causing a fair amount of damage. The larva is about a quarter of an inch long and an eighth of an inch wide with a yellow segmented body, a small black head, and six black legs. They disguise themselves by covering their bodies with black frass (insect feces). The larvae are voracious feeders and are causing severe defoliation. Defoliation weakens plants, making them more susceptible to attack by other pests and pathogens. Repeated defoliation may reduce plant growth and ultimately kill the plant. The adult stage is far less destructive, only chewing tiny holes in leaves.

**Control:** Severe infestations can be controlled with insecticides that are used for other leaf beetles. Refer to the CPM and HYG for specific chemical recommendations.



Figure 8 Sumac leaf beetle (*Blepharida rhois*) larvae

Suggested reading: <http://www.cedarcreek.umn.edu/insects/album/024107145001ap.html>

## White-marked tussock moth

White-marked tussock moth caterpillars (*Orgyia leucostigma*) (Figure 9) were found feeding on leaves of an Ohio buckeye (*Aesculus glabra*). The caterpillars are quite distinctive. When fully grown, they are about an inch to an inch and a half long and have long, pale yellow hairs, reddish orange heads, and long tufts of hair coming out of their front end. It is best to avoid touching them, because some people have allergic reactions to the hairs. Tussock moth larvae feed on leaves, first skeletonizing them and eventually eating the entire leaf. In September, caterpillars form gray, hairy cocoons on twigs and branches. The moth overwinters as an egg. Other hosts include apple, birch, crabapple, elm, fir, hickory, horsechestnut, linden, maple, oak, pecan, poplar, rose, sycamore, and walnut. There are two generations in Illinois.



Figure 9 White-marked tussock moth caterpillar (*Orgyia leucostigma*)

**Control:** As the growing season progresses, leaves can suffer a lot of damage without harming the tree much. By the mid-summer, trees generally slow their growth and have produced enough stored reserves to survive the winter. Damage by tussock moth larvae is mostly an aesthetic problem in landscape. We have heard of rare damage to trees if the caterpillars are very numerous. They can also cause major problems in forests. The caterpillars can be hand-picked (carefully and wearing gloves to avoid allergic reaction). *Bacillus thuringiensis* var. *kurstaki* (Btk) can be sprayed on young larvae. For more chemical recommendations, refer to the CPM or HYG.

Suggested reading: <http://www.fs.fed.us/r8/foresthealth/idotis/insects/wmtussskm.html>  
<http://www.ag.auburn.edu/enpl/bulletins/whitemarkedtussock/whitemarkedtussock.htm>



Figure 10 Rose midge (*Dasineura rhodophaga*)



Figure 11 Rose midge eggs found inside a rose bud

## Rose midge

Rose midges (*Dasineura rhodophaga*) (Figure 10), which can be destructive pests, have been found on roses (*Rosa* sp.) at the Chicago Botanical Garden. Adult females lay tiny yellow eggs on new growth, under the sepals of flowers buds in leaf buds or in shoots (Figure 11). After the eggs hatch into small white larvae, 1/12 inch long, they create deep gouges in plant tissue and feed on sap. There may be many midges in a bud. They usually feed at the base of flower buds or on the upper leaf surface and leaf petioles. Their feeding causes buds to become deformed and blackened. Eventually new shoots are killed and the larvae create a hole in the bud to emerge and fall to the ground to pupate, which is the overwintering stage. The adults emerge in late spring, living for only a day or two.

**Control:** Remove and destroy infested plant parts. If necessary, acephate (Orthene), and malathion can be used, according to the University of Illinois. For more chemical recommendations, refer to the HYG.



Suggested reading: [http://oregonstate.edu/dept/nurspest/rose\\_midge.htm](http://oregonstate.edu/dept/nurspest/rose_midge.htm)

## Powdery Mildew



Figure 12 Powdery mildew on rose (*Rosa* sp.)

Powdery mildew has been found on more hosts, including roses (*Rosa* spp.) (Figure 12). As previously reported, powdery mildew is a host specific disease caused by many related species of fungi. It appears on numerous ornamental plant species throughout the growing season.

**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 and avoid overhead watering, that creates high humidity, in late afternoons and evenings. Plant in locations suitable for the specific plant while spacing plants for good air circulation. Powdery mildew can cause significant damage on some plants 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.

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

## Cedar quince rust on crabapple

Cedar quince rust, caused by the fungus *Gymnosporangium claviceps*, was found on Red Jewel crabapple (*Malus* 'Red Jewel'). 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 (Figure 13). 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. Galls 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.



Figure 13 Crabapple fruit and leaf infected with *Gymnosporangium claviceps*

**Control:** Quince rust causes branches to be girdled and trees of both hosts can 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 telial horns have emerged from the galls on the juniper. The galls do not release spores 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.

Suggested reading: [http://www.urbanext.uiuc.edu/treeselector/detail\\_problem.cfm?pathogenid=8](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 leaves of Winter King hawthorn (*Crataegus viridis* 'Winter King') (Figure 14). Cedar-hawthorn rust is caused by the fungus *Gymnosporangium globosum*. Later the spots will become swollen and aecia, the cup-shaped fruiting bodies, will form on the underside of the leaves. Aeciospores will ultimately be released from the aecia during the summer, and they infect junipers, the alternate host, causing brown galls to form on juniper twigs the following spring. The spores produced on hawthorn cannot re-infect hawthorn.

**Control:** Refer to the CPM or HYG for specific chemical recommendations.

**Suggested reading:** [http://web.aces.uiuc.edu/vista/pdf\\_pubs/802.pdf](http://web.aces.uiuc.edu/vista/pdf_pubs/802.pdf)



Figure 14 Hawthorn leaves showing signs of *Gymnosporangium globosum* infection

## Fungus of the Week: *Fuligo septic*

*Fuligo septic* (Figure 15) is a plasmodial slime mold that is commonly seen on decaying wood material (mulch, fallen logs) during periods of cooler weather in the spring and fall. After rain events, *F. septic* is bright yellow and slimy in appearance. As the mold dries, it becomes off-white and finally becomes a tan-brown crust. Its pinkish-brown spores are dispersed by air movement when the dried mass is disturbed. The mass may get as large as 2.5 – 20 cm (1 – 8 in) long and wide, but is relatively thin (1.27 – 3.8 cm (0.5 – 1.5 inches)).

The group of fungi that make up the plasmodial slime molds received their name because they are a multinucleate mass of undifferentiated cells and that move in an amoeba-like fashion.



Figure 15 *Fuligo septic*

If this fungus is found in the landscape, it's working on decomposing your mulch, so leave it be. Happy Hunting!

## Woody of the Week

by Jaime Horn

The Woody of the Week is written to aid in basic botanical identification of the featured plant, while adding to the reader's knowledge bank of woody plants. Many of the terms used are standard for describing plant morphology and may require definitions for complete understanding. There are several publications on botanical terminology. Two of these publications are *Plant Identification Terminology: An Illustrated Glossary* by J.G. Harris and M. Woolf Harris and the Plant Morphology section in Michael Dirr's *Manual of Woody Landscape Plants* (page xiv) for pictures and descriptions.



## ***Magnolia virginiana***

### **Sweetbay Magnolia (laurel, swamp magnolia)**

**Family:** Magnoliaceae

**Native:** Massachusetts to Florida and Texas, swampy soils. Introduced in 1688.

**Mature Size:** In our climate, about 10-20' (in Southern climates to 60') (Figure 16)

**Hardiness:** Zones 5-9

**Foliage:** Alternate, thick, glossy, semi-evergreen in mild winters or deciduous, elliptic, up to 5" long, entire, lustrous green on top with silver underside.

**Stems/Buds:** Green stems turn brown with maturity, aromatic when bruised, stipular scars encircle the stem at each node as with all Magnolias. Buds are small, pubescent, silvery green, taper to a point with a bulbous base.

**Flower:** Deliciously fragrant (lemony), creamy white, up to 3" wide, 9-12 tepals, occur late May to June and sporadically thereafter, do not occur in large numbers but are beautiful when enjoyed up close (Figure 17)

**Fruit:** Typical of a Magnolia, oval-shaped aggregate of follicles, up to 2" long, red, open to show red seed coverings, slightly ornamental, appear in August (Figure 18).

**Culture/Usage:** Best in slightly moist and acidic soils in partial shade. In a moist site, will tolerate full sun. Unfortunately, harsh winters may prevent

this species from truly thriving in the Midwest. However, with proper siting in a partially shaded and protected spot, Sweetbay is a unique addition to the garden. Place near a patio or walkway where its flowers can be enjoyed fully. Many cultivars are available. Relatively problem free, though may develop chlorosis in alkaline soils, they are susceptible to scale, and Verticillium wilt.

**GET AN UP-CLOSE VIEW!:** Head up to Thornhill to enjoy 2 mature specimens of this week's WOW: in the Fragrance Garden, south bed: **KK-26/06-24, 14-28A**. Or, next time you're near the Visitor Center, meander into the Forecourt to see a small Sweetbay: N-44/18-95

**Interesting fact of the week:** The genus *Magnolia* is named for a French botany professor, Pierre Magnol (1638-1715). Magnol is credited with inventing the idea for classification of plants into families. His revolutionary idea to use morphological characteristics of plants to aid in identification was described in his *Prodromus historiae generalis plantarum, in quo familiae plantarum per tabulas disponuntur* (1689). In 1703, a tree from the Caribbean island of Martinique was granted the genus name *Magnolia* by Charles Plumier and later adopted by Linnaeus in *Species plantarum*.



Figure 16 Growth form  
Photo by John Hagstrom



Figure 17 Flower  
Photo by John Hagstrom



Figure 18 Fruit  
Photo by John Hagstrom

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The Plant Health Care Report is prepared by Stephanie Adams, M.S., Plant Health Care Technician, and edited by Donna Danielson, M.S., Plant Clinic Assistant; Fredric Miller, Ph.D., research entomologist at The Morton Arboretum and professor at Joliet Junior College; and Doris Taylor, Plant Information Specialist, and Carol Belshaw, an Arboretum 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.

## Literature recommendation:

David Arora. 1986. *Mushrooms Demystified 2<sup>nd</sup> ed.* Ten Speed Press. Berkeley, CA. ISBN-13: 0-89815-169-4.

Michael Dirr. 1998. *Manual of Woody Landscape Plants.* ISBN-10: 0-87563-800-7.

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<http://www.laborofloveconservatory.com/>.

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<https://pubsplus.uiuc.edu/ICLT-10.html>.

University of Illinois. 2008. *Home, Yard & Garden Pest Guide.* <https://pubsplus.uiuc.edu/C1391-08.html>.

UIPlants: The Woody Plant site for the University of Illinois (<http://woodyplants.nres.uiuc.edu>).

This report is available on-line at The Morton Arboretum website at <http://www.mortonarb.org/tree-plant-advice.html>

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](mailto:plantclinic@mortonarb.org). Inquiries or comments about the PHC reports should be directed to Stephanie Adams at [sadams@mortonarb.org](mailto:sadams@mortonarb.org).

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