

Plant Health Care Report



Scouting Report of The Morton Arboretum

August 1 - 14, 2009

Issue 2009.17

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.

We are now on a bi-weekly schedule. The next and last report will be published on August 28.

Quick View

What Indicator Plants are in Bloom at the Arboretum?

We're running out of indicator plants so we're going to show you one of our favorite cultivated landscapes on the Arboretum grounds. This is a berm planted right near the entrance to the Visitor Center. See how breathtaking an area with native prairie plants can be!



Accumulated Growing Degree Days (Base 50) as of August 12: 1689.5

Insects

- Sycamore tussock moth
- Milkweed bugs
- Fall webworm
- Honeysuckle aphid

Diseases

- Stigmina on spruce
- Bluegrass rust
- Linden leaf spot
- Tar spot of maple
- Melampsora rust
- Botrytis

Miscellaneous

- Dog vomit slime mold
- Dodder
-

Weed Note

- Teasel (*Dipsacus spp.*)

Feature Article

- Taking care of your trees during construction
By Stephanie Adams, M.S.

Degree Days and Weather Information

As of August 12, 2009, we are at 1689.5 growing degree days which are approximately eighteen calendar days behind the historical average (1937-2008) and five calendar days behind last year.

Location	Growing Degree Days through August 12	Precipitation between July 30 and August 12 in inches
The Morton Arboretum (Lisle, IL)	1689.5	0.73
Chicago Botanic Garden (Glencoe, IL)*	1604.5	0.61
Chicago O-Hare Airport*	1766.0	0.60
Aurora, IL**	1631.3	
Champaign, IL**	2097.4	
DuPage County Airport (West Chicago, IL)**	1891.0	
Decatur, IL**	2196.6	
Moline, IL**	1973.9	
Peoria, IL**	2103.4	
Quincy, IL**	2249.1	
Rockford, IL**	1681.6	
Springfield, IL**	2354.2	
Waukegan, IL**	1405.2	
Wheeling, IL**	1665.9	

*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>.

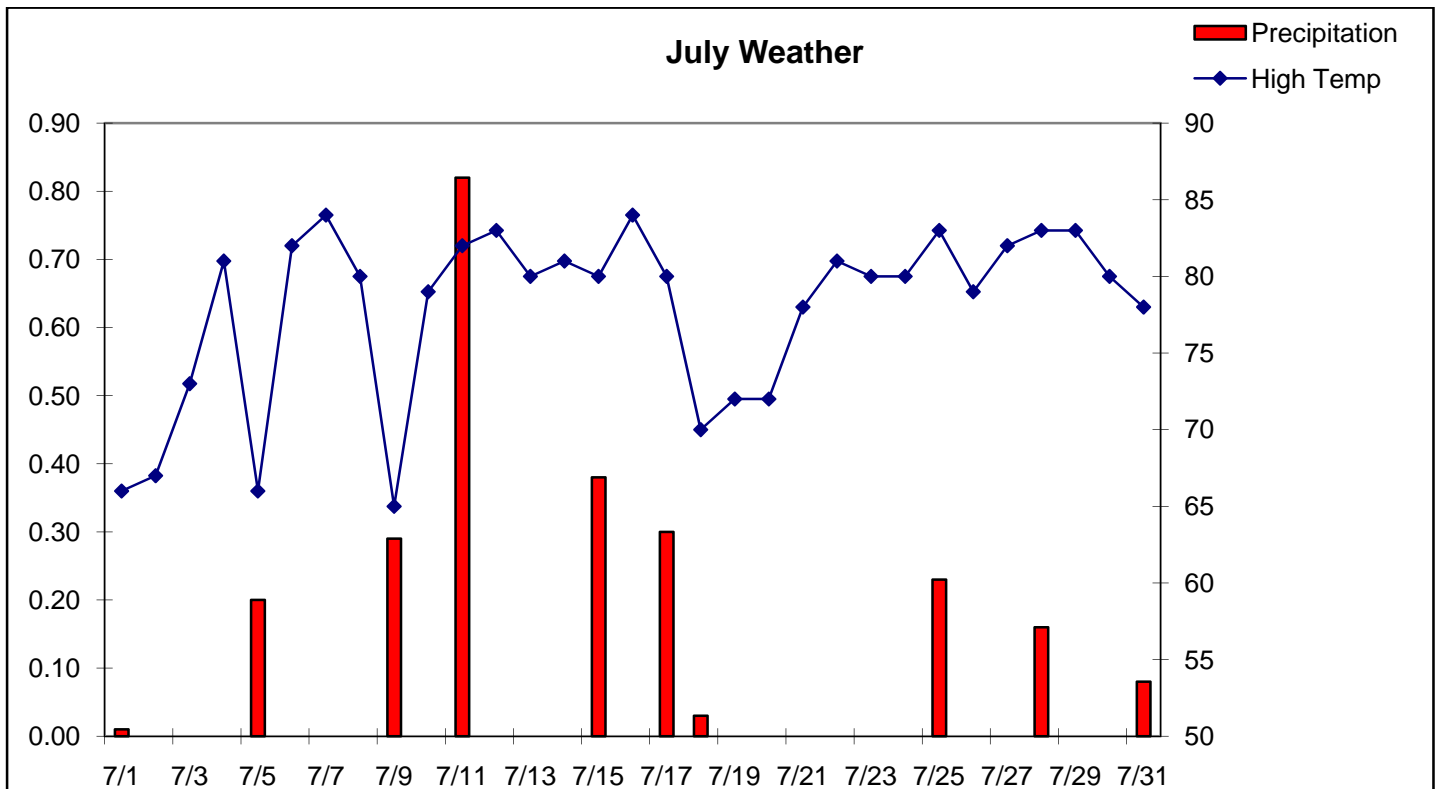
July weather

Our July weather was MUCH cooler and somewhat drier than average. The average temperature for the month was more than seven degrees cooler than our historical average (1937-2008)! Overall our total precipitation in July (2.50 inches) was drier than the historical average for July (3.77). However, rainfall varied some over the Chicago area with some of the area receiving more rainfall than we did in Lisle.

Summary of Jule Temperature and Precipitation Data

	July 2009
Average Daily Temperature	67.0° F
Historical Avg. Daily Temp.	74.1° F
High Temperature	84° F
Low Temperature	44° F
Total Precipitation	2.50 in.
Historical Avg. Precipitation	3.77 in.
Total Days with Precipitation	10

The following chart displays the daily precipitation and high temperatures:



This Week's Sightings

Sycamore tussock moth

Caterpillars of sycamore tussock moth (*Halysidota harrisii*), also known as Harris' tussock moth, were found on sycamore (*Platanus occidentalis*). The larvae are tan to yellow-brown with orange and white tufts of hair on the second and third thoracic segments. Fully grown caterpillars are about one inch long. The larvae feed on leaves of sycamore and London plane trees (*P. acerifolia*). They are generally present from July through October.

Control: Damage is generally aesthetic so control is not warranted.



Milkweed bugs (Boxelder Bugs NOT!)

We've seen a few samples of small milkweed bugs (*Lygaeus kalmii*) on butterfly weed (*Asclepias tuberosa*) fruits. Although they look similar to boxelder bugs, the big clue here is that they were found on butterfly weed, which is a kind of milkweed. We're seeing the adult milkweed nymphs and adults. Adults are about half an inch long with a red body and black wings with red markings that form an "X" shape on the wings which doesn't quite meet in the middle. The head is black with a dull red spot on the back. Adults suck sap from milkweed seeds. The insect overwinters as an adult. Eggs are laid on milkweed in spring.



Photo courtesy of John Hagstrom



Fall webworm

Fall webworm (*Hyphantria cunea*) caterpillars are feeding on black walnut (*Juglans nigra*). We've been scouting for fall webworm for two weeks and couldn't find any. Then suddenly we nearly got hit on the head with this big web in the woods. This caterpillar is known to feed on more than 100 species of deciduous trees, but preferred hosts include hickory, ash, birch, black walnut, crabapple, elm, maple, oak, and pecan. The caterpillars are pale green to yellow, sometimes with black spots, and covered with long, silky white hairs. There are two races, black-headed and red-headed. The black-headed webworms are supposed to appear about a month earlier than the red-headed race. Fully grown caterpillars reach about one inch in length. The caterpillars we saw are presently about a half inch long.

Fall webworms overwinter in the pupal stage in the ground, under loose bark, and in leaf litter. Adult moths appear from late May through August, and females deposit eggs in hair-covered masses on the underside of host leaves. Eggs hatch into caterpillars in about one week and they begin to spin a silken web over the foliage on which they feed. The webs enlarge in size as caterpillars continue to feed. Heavily infested trees can be completely covered with nests. In about six weeks, caterpillars will drop to the ground and pupate. Damage is generally aesthetic since this pest usually eats leaves late in the season.

Some people confuse fall webworm and eastern tent caterpillar. How can you tell the difference? Come on, this is too easy. Eastern tent caterpillars are spring caterpillars and only eat plants in the rose family such as crabapples. Fall webworm caterpillars are active much later in the season and have a much larger number of host trees.

Control: Chemical control is generally not warranted. The unsightly webs can be pruned out of small trees. Since these caterpillars stay in the web while feeding, pruning the webs at any time of day will eliminate the caterpillars, unlike Eastern tent caterpillars which leave the web during the day to feed. Webworms also have many natural enemies including birds, predaceous bugs, and parasitic wasps. Don't burn the nests in the trees because you will only do additional harm to your tree like the caller who burned the toilet paper out of his tree. *Bacillus thuringiensis* var. *kurstaki* (Btk) can control the larvae, but you must penetrate the webs in order to be effective. Btk is also not as effective against mature larvae. For information about chemicals to use for serious infestations, refer to the *2007 Commercial Landscape Turfgrass Pest and Management Handbook* (CPM) if you are a commercial applicator or the *Home, Yard and Garden Pest Guide* (HYG) if you are a homeowner.

Good websites:

<http://ohioline.ag.ohio-state.edu/hyg-fact/2000/2026.html>

<http://www.bugwood.org/factsheets/webworm.html>

Honeysuckle aphid

Honeysuckle aphids (*Hyadaphis tataricae*) have been brought into the Plant Clinic on honeysuckle (*Lonicera* spp.). Feeding on honeysuckle by this aphid can stunt new growth and cause witches' brooms. Heavy aphid infestations can kill plants. There are multiple generations during the summer.

Control: Plant resistant varieties of honeysuckle such as Clavey's dwarf (*Lonicera xylosteum* 'Claveyi'), *L. tatarica* 'Arnold Red', *L. x notha*, *L. amoena* 'Alba', *L. muendeniensis*, *L. xylosteoides*. Prune out witches' brooms before the eggs hatch. For chemical control, refer to the CPM if you are a commercial applicator or HYG if you are a homeowner.

Web sites:

<http://learningstore.uwex.edu/pdf/A3184.pdf>



Honeysuckle aphid feeding can cause witches' brooms

Stigmina on spruce

In the past, when we received samples of spruces with black fruiting bodies emerging from stomata of dying second year needles, we called it *Rhizosphaera* needle cast. However, after reading about *Stigmina* on spruce needles in Nancy Pataky's article in the May 15, 2009, issue of *Home, Yard and Garden Pest Newsletter*, we decided to investigate samples a little more thoroughly. Sure enough, we found *Stigmina lautii*, not *Rhizosphaera*, on the next sample we looked at, a weeping blue spruce (*Picea glauca* 'Pendula'). Just like *Rhizosphaera*, second year needles were turning dark and dying. There were black fruiting bodies emerging from stomates, but fruiting bodies of *Rhizosphaera* appear to be smooth, while many of the fruiting bodies of *Stigmina* are feathery. You need a really strong hand lens or microscope to determine the difference. Examination under a compound microscope is necessary to confirm the fungus. Current year's needles look healthy in both diseases.

It is not yet clear if *Stigmina* on spruces is a pathogen (disease-causing organism), but there is a definite association between needle blight symptoms and *Stigmina*. The recommended chemical control used for *Rhizosphaera* does not seem to be effective on *Stigmina*, but we don't know if the recommended timing or the recommended chemical or both are ineffective.

For more information, read the December 2006 issue of *Tree Talk* from the University of South Dakota:

http://www.ag.ndsu.edu/trees/whatnew/Tree_Talk_Dec2006-2.pdf



Bluegrass rust

Orange shoes, a result of bluegrass rust, have recently been spotted on the Arboretum's library staff. The suspected pathogen is *Puccinia* sp., a heteroecious fungus with numerous alternate hosts, mostly woody shrubs and herbaceous ornamentals. All turfgrasses can be infected by many different species of rust fungi, and Kentucky bluegrass is one of the more rust-susceptible grass species. Bluegrass rust is favored by overcast weather, high humidity, heavy dew formation, and temperatures in the low 70s. The disease is usually more severe when plants are drought stressed, and, in severe

infections, grass may turn yellow, wither, and die.

Initial symptoms of rust disease include yellow lesions on grass blades that enlarge over time and rupture to release orange spores. Spores are wind blown and splashed by rain to new infection sites on grass.



Control: There is no permanent shoe damage and the orange spores can be easily wiped off. Grass rust is usually not severe enough to warrant use of fungicides on turfgrass and sound management practices will keep this disease in check. Turfgrass should be watered early in the day to allow leaf blades to dry more quickly, and watered to wet the soil to a depth of 6 inches or more. Mow at the height recommended for the particular turf species. When the disease is present, catch lawn clippings and remove from the area. Fertilize regularly, but not excessively, during the growing season using a balanced fertilizer. Use rust resistant varieties or blends of turfgrass. Fungicides may be needed in severe infections. Refer to the CPM or HYG for specific chemical recommendations.

Good website:

http://web.aces.uiuc.edu/vista/pdf_pubs/412.pdf



Linden leaf spot

Leaf blotch of American linden, caused by the fungus *Asteroma tiliae*, was found on American linden (*Tilia americana*). We're seeing large, very dark brown irregular blotches with feathery margins on the leaves. The blotches are slightly lighter in the center of the blotch and appear mainly on the upper leaf surface. The corresponding lower leaf surface is tan with an indistinct margin. These blotches appear after mid-summer.

Control: Damage is aesthetic and control is not necessary.

Tar spot of maple

Tar spot of maple was found on silver maple (*Acer saccharinum*). The disease looks just like shiny black spots of tar flung about on the upper surface of maple leaves. Several different fungi in the genus *Rhytisma* infect the leaves of maples and cause the spots. The spots range from 1/5 to 4/5 inch in diameter. *Rhytisma* spp. most commonly infect leaves of silver and Norway maples, although big leaf, mountain red, Rocky mountain, and sugar maples are also susceptible. It does little harm to the trees this late in the season, but is unsightly.

Control: Control is not necessary unless a tree is severely infected. To reduce inoculum, rake up and discard the leaves in fall. An appropriate fungicide may also be helpful. For chemical recommendations, refer to the CPM if you are a commercial applicator or HYG if you are a homeowner.



Tar spot on sugar maple

Web site: <http://wihort.uwex.edu/gardenfacts/XHT1126.pdf>

Melampsora rust

We are finding Melampsora rust, caused either by the fungus *Melampsora medusae* or *M. abietis-canadensis* on cottonwood leaves (*Populus deltoides*). Small yellow spots have developed on upper leaf surfaces with corresponding small yellow-orange pustules on lower leaf surfaces. In late summer, the pustules turn dark brown to black and become crust-like. Occasionally, the rust will be severe enough to cause leaf drop. If the rust is severe for several years in a row, it may slow the growth of a tree, but otherwise is not too big of a problem in landscapes except in small trees.



The fungus overwinters in fallen leaves. In spring, spores are blown by air currents to alternate hosts (e.g., larch, Douglas-fir, and balsam fir in the case of *M. medusae* or hemlocks if the rust is *M. abietis-canadensis*) and infect expanding needles during wet periods. The needles of alternate hosts develop yellow spots on their upper surfaces. During the summer, spores are produced on the conifer needles and are dispersed by wind to willows, poplars, and cottonwoods where they cause the spots we are seeing now.

Severe infections may cause leaves to become distorted, wither, and drop prematurely. Repeated infections may slow tree growth, but this slow growth is often masked by the normally rapid growth of these trees. Usually Melampsora rust is not a problem in landscape trees.

Control: Rake and destroy fallen leaves in the fall to reduce inoculum.

Good website: <http://www.ipm.uiuc.edu/diseases/series600/rpd605/>



Botrytis

We found a wild geranium (*Geranium maculatum*) with severely stunted and blighted shoots caused by *Botrytis cinerea*. Under the dissecting scope, our diagnostician found lots of gray fuzz in the blighted area that looks like tiny gray trees. This disease is most prevalent in cool, humid conditions, which we certainly had until the middle of June. It attacks plants that are in a weakened state due to factors including poor nutrition, low light intensity, or low temperature. It is also common on senescing tissue and is often a problem in greenhouses because of the humid, closed conditions.

Control: Preventing plant stress and promoting air circulation helps keep plant surfaces dry and reduces disease severity. For information about chemical control, refer to the CPM or HYG.

Botrytis looks like tiny gray trees

Good web sites:

http://plantclinic.cornell.edu/FactSheets/botrytis/botrytis_blight.htm

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

Dog vomit slime mold

We found dog vomit slime mold (we are not kidding about the name) growing in mulch last week. This is a fungus that grows in mulch, especially during wet conditions. It looks exactly like its name. The patch was a beige mat with yellow edges and bright yellow underneath. It was oblong and about a foot long. When it dries out, it turns brown and then to a white powder. It favors compacted mulch. Rake the mulch to help aerate it and alleviate the compaction. The fungus will not harm your plants. So, if you're planning an outdoor event and don't want the mold around, just break it up, let it dry out, and rake it up or turn it into the soil. We're always amused when callers try to describe their discovery. One person was concerned about the mysterious unnamed animal that seemed to visit their yard every night that was obviously very sick. They were relieved to hear that it wasn't a sick animal that was going to be contagious to their pets. Someone else thought it was teenage kids that partied too hard.



Dodder

A sample of dodder (*Cuscuta polygonorum*) was brought into the plant clinic wrapped around lythrum. Dodder is a more serious problem in tropical and warm temperate areas, but in our cool temperate climate, it can attack green or succulent parts of low-growing woody plants. Dodder can kill herbaceous plants and greatly weakens woody ones by smothering or stunting the host plant. Dodder looks like masses of yellow orange spaghetti strands (you probably think I'm making this one up). It generally reproduces from seed. The parasite penetrates the host plant by means of haustoria through which the dodder receives water and nutrients.

Control: Don't allow the dodder to produce seed. It generally reproduces through seeds and this will allow the problem to continue. Pick the dodder off the host plants or remove and destroy infested plants.

Good web site:

<http://www.coopext.colostate.edu/TRA/dodder.html>

Weed Note

Common teasel (*Dipsacus fullonum*) and Cutleaf teasel (*Dipsacus laciniatus*)

Teasel is a common, aggressive biennial weed. Thick areas of teasel are common in sunny areas along roadsides. Teasel is a threat to natural areas and frequently forms monocultures. Both common and cutleaf teasels are found in the Midwest.

First-year plants form a basal rosette. In the second year, a tall flower stalk forms. The plants form inflorescences of tubular small flowers that are packed in dense spiny heads. Long, stiff, spiny bracts grow at the base of the flower heads. The plant dies after it flowers and produces seeds. Each plant produces more than 2000 seeds which are viable for at least two years. Stems are prickly and may grow to 7 feet tall. The simple, opposite leaves are prickly on the lower side of the midrib. The leaves that attach to the stalk have no petioles (leaf stalks) and form cups that hold water at the point where they attach to stems. Teasel spreads easily by seed.

Control: Burn seed heads, or bury them deeply. The plant can be dug up, but the entire taproot needs to be removed. If you cut the flower stalk just before flowering, it will not produce another flower stalk and will die at the end of the season. If you cut the flower stalks after they have begun to flower, remove the cut flowers as, like garlic mustard, seeds can mature on the flowers after cutting. 2,4-D has been used successfully to treat teasel if applied before the flowers stalks emerge. 2% active ingredient triclopyr formulated for use with water can be applied to leaves and stems before the flower stalks emerge.

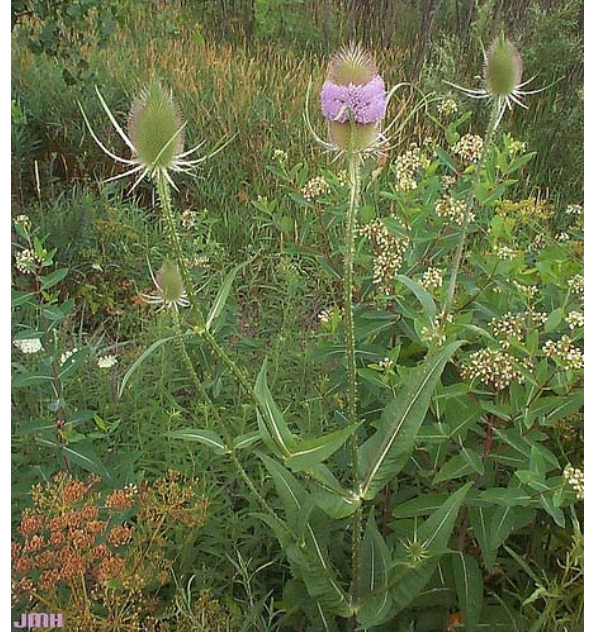


Photo courtesy of John Hagstrom

What to Look for Next Week

We will be looking for soldier beetles (beneficial insects) and butternut canker.

Feature article:

Taking Care of Your Trees During Construction
By Stephanie Adams, M.S.
Research Assistant

These days it seems that no matter where you look, you see construction happening- this can be anything from building new houses, installing irrigation, creating out-buildings or setting up fencing. Any kind of construction can have short and long term effects on your trees and they may potentially be deadly to your trees. According to the International Society of Arboriculture (ISA), wooded lots can cost nearly twenty percent more than un-wooded lots, so taking the time to protect your trees during construction is also protecting your investment. Before beginning work, hire an ISA certified arborist to help you create a plan to best manage your trees during construction. Also, have an open line of communication between yourself, the contractor, and the arborist to alleviate any miscommunications during the project.

When working with a large stand of trees that have matured together, special considerations need to be made before removing trees. Stands such as this work together as a unit so that the trees inside the stand have been protected from weather, such as strong winds and sunlight. Removing the outermost trees and suddenly exposing the protected trees may result in failure. Consult your arborist to determine the best management practice to preserve as many trees as possible.

Some of the obvious damage that can be incurred during construction are torn branches, trunk wounding, and torn bark. But often the damage that has the longest and most deadly effects people don't even see, because it occurs underground. Most people do not realize that trees do not have taproots, like carrots. Trees have several large structural roots and then millions of fine absorbing roots, which all grow down to about 16 inches deep. These roots grow horizontally out from the trunk 1-3 times the height of the tree, according to the ISA.

Severing a structural root also severs many absorbing roots, which may remove a large portion of the root system. This reduction in the root system also reduces the tree's ability to absorb nutrients and water and may cause the tree to become structurally unsound. If utilities need to be installed underground, have the contractor tunnel underneath the tree, rather than trenching near the tree; this will prevent a lot of root damage.

Another way roots can get damaged during construction is from soil compaction. Soil compaction occurs when heavy weights are applied to the soil, such as vehicles and building materials. For healthy, vigorous roots, soil needs to have a large amount of pore space. These spaces are filled with air and water, which are necessary for root growth. Compacting soil removes the pore spaces, subsequently removing water, air, and space, which will reduce root health and vigor. Roots can also be damaged during compaction by being crushed under heavy loads.

Soil grading can also have a major impact on the root system. According to the ISA, adding as little as 2-6 inches of soil over a mature tree's root system is enough to cause harm. Adding soil under a tree suffocates the root system and makes water less available to the fine absorbing roots.

The best way to prevent damage to your trees during construction is to work with your contractor and arborist to write specifications before ground breaking. Erect barriers, such as fences, under your trees to protect them. The ISA recommends that the fence be a minimum of one foot from the trunk for every inch the trunk is in diameter. Ideally, the fence should be erected at the edge of the canopy all the way around the tree. Specify that no vehicles or building materials are to be run or stored in the fenced area. Also, no cleaning run off, such as concrete, is to be poured inside the fenced area. Correcting any construction damage that has incurred under a tree is nearly impossible, so prevention is the best management practice. To help ensure that the tree preservation specifications are being followed, include fines for violating any of them. Visiting the site regularly and becoming well-known to the construction workers may also ensure that your specifications are abided by.

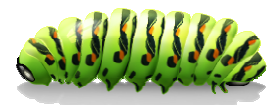
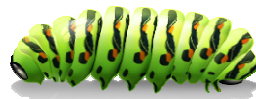
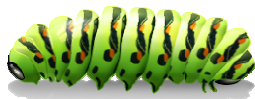
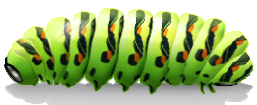
Even once all the construction is complete, your trees may need several years to completely recover from any injuries. Trees with construction damage are more prone to infection and disease. Working closely with your arborist and establishing a management plan over the next several years could ensure that your trees come out of the whole experience seemingly unscathed.

Quotes of the week:

"Gardening is a kind of disease. It infects you, you cannot escape it. When you go visiting, your eyes rove about the garden; you interrupt the serious cocktail drinking because of an irresistible impulse to get up and pull a weed." ~*Lewis Gannit*

"By the time one is eighty, it is said, there is no longer a tug of war in the garden with the May flowers hauling like mad against the claims of the other months. All is at last in balance and all is serene. The gardener is usually dead, of course." ~*Henry Mitchell, The Essential Earthman, 1981*

"Not every soil can bear all things. Be practical." Found in a fortune cookie by Jenny Coladarci of Moore Landscapes.



The Plant Health Care Report is prepared by Donna Danielson, Plant Clinic Assistant and edited by 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 first two quotes of the week were provided by Rita Hassert, Technical Services Librarian Extraordinaire at the Sterling Morton Library. 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 Donna Danielson at ddanielson@mortonarb.org.

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