

Plant Health Care Report

Scouting Report of The Morton Arboretum

April 22, 2011

Issue 2011.02

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. The Report is published bi-weekly on Friday in April and August, and weekly May-July.

Arboretum horticulturists, Arboretum volunteers, and I will be scouting our grounds for insects and diseases throughout the season. We will also be including information about other pest and disease problems based on samples brought into the Arboretum's Plant Clinic from homeowners and professionals.

Quick View

What Indicator Plants are in Bloom at the Arboretum?

Cornelian-cherry dogwood (*Cornus mas*) Figure 1

Accumulated Growing Degree Days (Base 50): 50

Accumulated Growing Degree Days (Base 30): 598

Insects

- Eastern tent caterpillar
- Zimmerman pine moth
- Hemlock needle miner

Diseases

- Diplodia (Sphaeropsis) tip blight on pine
- Dothistroma tip blight on pine



Figure 1 Cornelian-cherry dogwood (*Cornus mas*). Photo courtesy of John Hagstrom

Degree Days and Weather Information

As of April 20, 2011, we are at 50 base-50 growing degree days (GDD), which is 93 GDD₅₀ (17 calendar days) behind 2010, and behind the historical average (1937-2010) by 39 GDD₅₀ (8 calendar days). Since April 8, it has rained 1.83 in., which brings us to 2.18 in. this month and 8.82 in. for the year.

Location	B ₅₀ Growing Degree Days Through April 20, 2011	Precipitation (in) April 8–April 20, 2011
Aurora, IL**	53	
Carbondale, IL**	361	
Champaign, IL**	154	
Chicago Botanical Gardens	35	2.37
Chicago Midway	51	
Chicago O'hare*	47.5	2.04 (April 13-19)
Crystal lake**	46	
Harvard, IL**	39	
Kankakee, IL**	90	
The Morton Arboretum (Lisle, IL)	50	1.83
Peoria, IL**	154	
Quincy, IL**	213	
Rockford, IL**	47	
Springfield, IL**	223	
Waukegan, IL**	21	

*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, visit: <http://www.gddtracker.net/?zip=60185&model=2&state=IL>

Eastern tent caterpillar

Eastern tent caterpillars (*Malacosoma americanum*) (Figure 2) have been found on Black choke cherry (*Prunus virginiana* var. *melanocarpa*) (Figure 2) 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. 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.



Figure 2 Eastern tent caterpillars (*Malacosoma americanum*)

Management: A cultural practice 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. 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 *Commercial Landscape and Turfgrass Pest Management Handbook 2010* (CPM) if you are a commercial applicator or *Home, Yard & Garden Pest Guide* (HYG) from the University of Illinois if you are a homeowner.

Suggested reading:

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

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

Zimmerman pine moth

White to pinkish pitch masses, caused last summer by Zimmerman pine moth (*Dioryctria zimmermani*) larvae (Figure 3), are visible on several pine species. Larvae damage trees by tunneling just beneath the bark of the trunk and branches. The tunnels can girdle and weaken the trunk or branches, so they are easily broken by wind or snow (Figure 4). Heavily infested trees are often deformed and are sometimes killed. Common hosts include Austrian, Scots, and ponderosa pines.

Larvae overwinter in cocoon-like structures under bark scales. They become active in the spring and tunnel into the tree. In late spring, they migrate to the base of branches, tunneling into the whorl area where pitch masses exude from the wound site. The larvae continue to feed, pupate within the pitch mass, and emerge as adults in August. After mating, female moths lay eggs, often near wounds or previous pitch masses. Eggs hatch in about a week and the larvae feed for only a brief time before preparing to overwinter.



Figure 3 pinkish pitch masses due to Zimmerman pine moth larvae

Management: Larvae are very difficult to detect by scouting, so you have to focus on symptoms and phenological indicators. Damaged wood should be pruned out as soon as dieback and pitch masses are seen. Larvae can be controlled by spraying bark and foliage with insecticides either in April, when saucer magnolia is in pink bud to early bloom (70 –160 GDD), or in mid-August, when paniced hydrangea is pink (2700 – 2900 GDD). For further information about chemical control and timing refer to the 2010 CPM or HYG.



Figure 4 Damage due to Zimmerman pine moth

Suggested reading:

<http://www.ext.colostate.edu/pubs/insect/05591.html>

http://www.mortonarb.org/plantinfo/plantclinic/pests_pinemoths.pdf

<http://www.entomology.umn.edu/cues/Web/227ZimmermanPineMoth.pdf>



Figure 5 Hemlock needleminers (*Coleotechnites macleodi*)

Hemlock needle miner

Hemlock needleminers (*Coleotechnites macleodi*) (Figure 5) were found on Eastern hemlock (*Tsuga canadensis*). The term “needle miner” describes the larval feeding habits of insects that bore into and feed on the soft internal tissue of evergreen needles. These tiny caterpillars hatch in July, enter leaves near the base, and feed on green tissue inside the needle, leaving the epidermis of the needle intact. They bind needles together with webs, so you see clusters of brown, mined needles throughout the tree (Figure 8). The insect overwinters as a larva and resumes feeding in the spring.

Management: Hemlock needleminer is considered a minor pest and control is usually not necessary.

Diplodia (Sphaeropsis) tip blight on pine

Sphaeropsis tip blight (Figure 6) of pine is a disease that infects and kills buds and emerging needles of pine. The fungus also causes cankers on stems. The disease is severe on Austrian pine, among others. If you have had a continuing problem with this disease, now is the time to use a fungicide on emerging needles. Refer to the CPM and HYG for specific chemical recommendations. We will further address this disease in a later issue when new symptoms occur.



Figure 6 Sphaeropsis tip blight symptoms

Dothistroma needle blight

Dothistroma (*Dothistroma pini*) infections initiated last year have been found on needles of limber pine (*Pinus flexilis*) throughout the tree. We are also seeing the next stage in which the tips of needles progressively turned light green, tan, and then brown, while the base of the needles remained green (Figure 7). Initial infection symptoms of brown to red-brown spots and bands are evident on needles. Black, elongated, fungal fruiting bodies were visible protruding through the needles. Conidia (fungal spores) are released from these structures during wet weather and transported by rain throughout the growing season. New infections can occur from May to October as long as there is rainfall. The host range also helps to differentiate this disease from others caused by needle cast fungi. Austrian and ponderosa pines are reported to be the most common hosts of Dothistroma in the Midwest. Limber pine is a common host in the West. Red and Scots pine are usually resistant.

Management: The fungus resides in infected, cast needles, so remove fallen needles as much as possible. Give plants ample spacing and prune to improve air flow and allow for faster needle drying. Once a tree exhibits symptoms throughout the canopy, there is little that can be done except removal. For less severe situations, and to protect nearby



Figure 7 Dothistroma tip blight symptoms

healthy trees, one to two applications of a fungicide controls this disease, but timing is critical. Sprays should be applied just before buds begin to elongate/swell (usually early May) and once again when new needles are fully expanded. If wet weather continues late into spring and summer, additional applications may be needed. For further information on chemical controls refer, to the CPM or HYG.

Suggested reading: <http://learningstore.uwex.edu/pdf/A2620.pdf> and <http://na.fs.fed.us/spfo/pubs/fidls/dothistroma/doth.htm>

What to look for in the next week

Brown rot of stone fruit, cold damage, juniper webworms, telial horns of cedar rusts, and larch casebearers

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: Fritz Porter, Davida Kalina, Mary Carter Beary, Bill Sheahan, LeeAnn Cospers, and Loraine Miranda. Your hard work is appreciated.

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; 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:

Indicator plants are chosen because of work done by Donald A. Orton, which is published in the book *Coincide, The Orton System of Pest and Disease Management*. This book may be purchased through the publisher at: <http://www.laborofloveconservatory.com/>

The *2010 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).

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 3:00 Mondays through Saturdays or email plantclinic@mortonarb.org. Inquiries or comments about the PHC reports should be directed to Stephanie Adams at sadams@mortonarb.org.

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