UNIVERSITY OF ILLINOIS EXTENSION
HOME, YARD & GARDEN PEST NEWSLETTER
College of Agricultural, Consumer and Environmental Sciences, University of Illinois at Urbana-Champaign
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Greenhouse Management Workshop

The Fourth Annual Greenhouse Management Workshop will be at the Holiday Inn Select in Naperville on June 4. The registration fee is $30 for Illinois Greenhouse Association members and $45 for nonmembers. The program follows:

10:00 to 11:00 a.m., "Mighty Mites": All Spider Mites Are Not the Same. Raymond A. Cloyd, assistant professor, Extension specialist in ornamental entomology, U of I, Department of Natural Resources and Environmental Sciences, Urbana.

11:00 a.m. to noon, Misconceptions of Plant Nutrition. Kimberly A. Williams, associate professor, floriculture nutrition, Kansas State University, Department of Horticulture, Forestry, and Recreation Resources, Manhattan.

Noon to 1:00 p.m., Lunch.

1:00 to 2:00 p.m., Biofungicides for Use in Greenhouses. Russ W. Wallace, BioWorks, Inc., Orem, UT.

2:00 to 2:45 p.m., Calibration and Calculation: Going from Large to Small Volume. Cloyd.

2:45 to 3:00 p.m., Break.

3:00 to 4:00 p.m., Water-Quality Issues. Williams.

4:00 to 4:30 p.m., Conclusion and evaluation.

For information, contact Raymond Cloyd at **rcloyd @uiuc.edu** or (217)244-7218. *(Raymond Cloyd)*

PLANT DISEASES

Fungicide Changes/Updates

Pesticide labels are frequently reviewed and changed for many reasons, including host additions or deletions, rate changes, application method changes, and environmental and human safety issues. It is difficult for home growers, as well as commercial producers, to keep up with these changes. In the previous issue of this newsletter, you were given a link to the addendum for the *2001 Commercial Landscape and Turfgrass Pest Management Handbook*. In that addendum, Bruce Paulsrud listed new fungicides registered for use on turf and ornamental plants.

Another very good source of information is the *Illinois Pesticide Review Newsletter*, available free on the Internet at **www.pesticidesafety.uiuc.edu/newsletter/html/index.html.** You can print it out at your local Extension office (or elsewhere). In the most recent issues of that newsletter, you can find information on pending label changes for the following fungicides: Aspire, Bayleton, Bordeaux Mixture, Botran, Cuprofix Disperse, Eagle, Flint, Fore, Gravel, Heritage, Kaligreen/Armicarb, Kocide, Maneb, Mefenoxam 2, Phyton 27, Stature, and Taegro. In many cases, new hosts have been added to the label. In a few cases, uses have been removed. Refer to the *Illinois Pesticide Review* for details; and always read product labels carefully for changes before using the product. *(Nancy Pataky)*

Scab of Crabapple, Apple, Pear

Scab is a fungal disease caused by *Venturia inaequalis*. Undoubtedly, most of you have seen or heard of this disease. It is very common on crabapples and apples, but it also infects pear, mountainash, and pyracantha. Look for olive green leaf spots in the spring, followed by leaf yellowing and extensive defoliation of susceptible varieties by late June.

A wetting period is necessary for infection to occur. The length of that period depends on the temperature, with the minimum period on leaves being only about 6 hours if temperatures stay near the optimum of 68°F. Prolonged wetness allows for a more severe infection. If rains accompany the warm trend of late, infection is inevitable on susceptible varieties. Look for symptoms to show 8 to 18 days after infection.

Fungicides may be used to protect susceptible varieties *(before infection occurs).* Chemical applications should be repeated according to label directions but continued until 2 weeks after petal fall. Such applications protect the plant for only one season. The first application should have been applied by now.

If you choose to use a fungicide, consider selecting a systemic product to avoid loss by rains and to reduce the number of applications necessary. The *Commercial Landscape and Turfgrass Pest Management Handbook* and the *Home, Yard, and Garden Pest Guide* both list chemical options. In addition, at the end of each disease chapter, you can find a table listing all fungicides recommended in the chapter,

their active ingredient, and mobility (protective contact or systemic).

To avoid fungicide resistance, do not use the same systemic product repeatedly. Determine the mode of action of the systemic products and rotate between different types. As an example, homeowners could use three systemic active ingredients to protect against scab: thiophanate-methyl, propiconazole, and myclobutanil. Because the latter two are both demethylation inhibitors, rotating them would not help avoid fungicide resistance. Thiophanate-methyl is a miotic poison and could be effectively rotated with the other two.

If you are planting new crabapples this year, look for varieties with resistance to scab, rust, fire blight, and powdery mildew. One publication that may help is by U of I professors Dave Williams and Gary Kling: *Recommended Crabapples for Illinois Landscapes*. Look for it on the Web at **www.extension.uiuc.edu/IPLANT/plant_select/trees/Selecting_Crabapples.pdf.** For details on the scab disease, refer to *Report on Plant Disease,* no. 803, available in your Extension office or on the Web at **www.ag.uiuc.edu/~vista/horticul.htm.** *(Nancy Pataky)*

Fire Blight

Another disease we are likely to see in warm, wet conditions is fire blight. It is caused by a bacterium, *Erwinia amylovora*. Susceptible hosts include apple, crabapple, pear, ornamental pear, cotoneaster, hawthorn, firethorn, and mountainash. All hosts are in the Rosaceae family, but not all Rosaceae are affected. Resistant varieties are available.

When weather is warm and wet in the spring, flowers serve as the site of infection. The bacterium can infect natural openings or wounds and is spread by wind, water, equipment, and even animals. As long as warm, wet conditions continue, the bacterium can continue to infect new sites and continue to spread.

Symptoms rapidly progress in the plant. Look for water-soaked or wilted new growth that quickly turns brown to black and remains attached to the stem. Stem tips often curl over in a characteristic "shepherd's crook." Dark cankers develop in the wood as the bacterium moves down the shoots or flowers.

Most of the primary inoculum in the spring comes from bacteria that have overwintered in cankers on stems. Removing the cankers significantly reduces the bacteria in the area. Preferably, such removal should be done in the dormant season, as was suggested in the fall issues of this newsletter. Spring removal of dead or infected wood often stimulates more succulent growth on the tree. That might be good in most cases, but the fire blight bacterium infects succulent new growth. If you have tissue to remove now, consider waiting until the weather turns hot and dry. Avoid heavy nitrogen fertilization because this practice also promotes succulent new growth susceptible to the fire blight bacterium. If pruning is done in the growing season, tools should be disinfected before each cut. It is necessary to make pruning cuts 6 to 8 inches down the stem from the dead tissue and into the green, healthy growth. The stem does not show symptoms that far from the cankered area, but the bacterium may still be present in low populations.

If fire blight has been a problem in past years, some chemicals may be used as protectants. You can find the recommendations in the pest management handbooks listed in the scab article. Copper formulations and antibiotics are generally used in commercial fruit production aimed at protecting the flowers from infection. Dormant copper sprays are recommended for control of fire blight, particularly following severe fire blight years. We are past the dormant spray time, so if fire blight is a perennial problem for you, mark your calendars to remind yourself to spray in the dormant season. If establishing new plantings, look for resistant varieties. The U of I publication *Recommended Crabapples for Illinois Landscapes* (see the scab article) lists fire blight resistance.

Consult *Report on Plant Disease,* no. 801, for details about fire blight on fruit trees. This publication is available in Illinois Extension offices or on the Web at the VISTA site listed in the scab article. Commercial producers or those interested in details about diseases that can affect fruit (and often their ornamental counterparts such as crabapple) can refer to the *Midwest Commercial Small Fruit and Grape Guide 2002,* also available through Extension offices. The *Illinois Fruit and Vegetable News* is available free of charge on the Internet at **www.aces.uiuc.edu/~ipm/news/fvnews.html.** *(Nancy Pataky)*

Clean Up Cankers and Dead Wood Now!

If you failed to get rid of dead wood and clean up your landscape last fall, get it done now. You can refer to issue no. 19 of the 2001 *Home, Yard, and Garden Pest Newsletter* for details. Plant material infested with pathogens will soon begin to develop and spread further in the planting. For example, brown rot of ornamental fruit overwinters on rotted berries on the ground or in the tree. Removing these will greatly decrease disease incidence in 2002. Wood rot and root roots can invade woody plants via cankers. Don't delay in removing these where possible.

A canker is a dead area on the stem or trunk of a tree or shrub. The vascular tissue under the canker is dead as well. As the canker girdles the stem, leaves begin to wilt, turn yellow and then brown or black. With fire blight, this happens very quickly. Fungal cankers progress more slowly. Bark on the younger twigs may lose color or blacken, depending on the canker or plant involved. The cankers produced by fire blight are often black on pear and brown on apple. If a canker girdles the stem, the twig dies from that point to the tip.

When pruning out cankers, keep in mind that this wood is infected with a pathogen. Remove affected wood from the site. Disinfect pruning shears between cuts if possible. Always try to prune in dry weather to prevent pathogen spread. Refer to the fire blight article for particular exceptions for that disease. Oaks should be pruned in the dormant season. Sap flow in the growing season often attracts beetles that might bring the oak wilt fungus to the tree. A report on cankers and dieback diseases of trees is available as *Report on Plant Disease,* no. 636, available through Illinois Extension offices or on the Web at **www.ag.uiuc.edu/~vista/horticul.htm.** *(Nancy Pataky)*

INSECTS

Zimmerman Pine Moth

Throughout Illinois, it is time to be on the lookout for Zimmerman pine moth, *Dioryctria zimmermani*, larvae (caterpillars) actively crawling on the bark of trees. The larvae are highly exposed and susceptible to an insecticide spray application, after overwintering in bark crevices in silken webs often referred to as *hibernacula.* Zimmerman pine moth larvae feed on all pines, particularly Scotch and Austrian. The larvae bore into trees and create masses of pitch at branch whorls on the trunk or on shoots near the terminal leader. These pitch masses resemble galls. Excessive tunneling by the larvae can kill terminal leaders. Heavily infested terminals curve downward, resembling a fishhook. Repeated trunk attacks by larvae can cause tops to break off, making the tree unsalable. Young trees are more susceptible to attack from the larvae, and more attractive to adult females for egg-laying—probably due to stress from transplanting.

Management of Zimmerman pine moth primarily involves sanitation and the use of insecticides. On Christmas tree plantations, scout regularly by visually inspecting trees for the larvae and then later for pitch masses on the main stem or terminal leader. Prune out damaged wood and injured shoots, or remove trees that are showing visible symptoms of Zimmerman pine moth damage. The insecticide chlorpyrifos (Dursban) or dimethoate (Cygon) can be used to control the larvae by spraying the bark and foliage in April or mid-August. Newly purchased chlorpyrifos will not be labeled for use in residential areas. The optimal time to control this insect is when it is in the caterpillar stage and before it enters the bark. High-volume sprays should be used to drench the stem and bark, as a thick canopy of pine needles may prevent sprays from reaching the trunk.

Although Zimmerman pine moth larvae are susceptible to natural enemies, including a variety of parasites (parasitoids) and predators, numbers are not sufficient to impact the population and prevent damage.

Planting resistant varieties of Scotch pine–such as the short-needled varieties from Greece, Turkey, and west and south Eurasia–may be a long-term alternative option to minimize problems with Zimmerman pine moth. *(Raymond Cloyd)*

European Pine Sawfly

The eggs of European pine sawfly, *Neodiprion sertifer,* have hatched throughout Illinois. Young larvae are 1/4 inch long and olive green, with a black head. Older larvae are over 1 inch long, with green stripes. The larvae are gregarious, or feed in groups. They feed on the needles of a variety of pines, especially Scotch, red, and mugo pine. Larvae strip the needles of mature foliage, leaving only the central core, which is white and then turns brown, eventually falling off. Larvae generally finish feeding by the time needles emerge from the candelabra. As a result, those needles are not damaged. There is minimal threat of branch or tree death resulting from sawfly feeding. However, the loss of second- and third-year needles may be noticeable on landscape trees and ruin the appearance of Christmas trees. In late spring, the larvae drop to the ground and pupate in brown, leathery cocoons at the base of trees. Wasplike adults emerge in the fall and lay eggs in the needles before winter. The females create yellow scars in needles when laying eggs. There is one generation per year in Illinois.

Although sawfly larvae resemble caterpillars (order: Lepidoptera), they are the larvae of insects related to wasps (order: Hymenoptera). This means that the bacterial insecticide, *Bacillus thuringiensis kurstaki* (Dipel and Thuricide), is not effective in controlling sawfly.

Management of European pine sawfly may involve hand removal (if feasible) or washing larvae off plants with a hard stream of water. If necessary, a number of pest-control materials may be applied to affected foliage, including acephate (Orthene), azadirachtin

(Azatin or Ornazin), carbaryl (Sevin), chlorpyrifos (Dursban), and/or spinosad (Conserve). When using any pest-control material, be sure to follow label directions. *(Raymond Cloyd)*

Scouting Watch

Spring is occurring quickly throughout Illinois with the very warm weather that we have had recently. Insect-development degree days are accumulating quickly, so many spring-occurring insects are showing up. Following are some to be looking for.

Eastern tent caterpillar eggs hatch when the leaves emerge on crabapple. Look for the 1- to 2-inch tents in twig crotches of crabapple, hawthorn, flowering cherry, purpleleaf plum, mountainash, and other Rose family plants.

Cankerworms have hatched throughout the state. Scout for these loopers by striking the branch to see if any drop down on silk threads. Trees that don't seem to be leafing out are suspect as well because the inchworms may be eating the leaves as they expand. These caterpillars are most common on elm, hackberry, honey locust, and crabapple.

Spruce spider mite and its relatives will be active on spruce, pines, junipers, and other needled evergreens. Hold a white sheet of paper under a branch and strike it sharply. The mites will be knocked onto the paper where they can be easily seen. Slow-moving mites that squash green are spider mites; fast-moving mites that squash red are beneficial predatory mites. There may be enough predatory mites to control the spider mites without spraying.

Hemlock rust mites have been found at the Morton Arboretum in mortheast Illinois. They will cause needles to turn yellow and fall off hemlock, fir, yew, and spruce. Realize that needles that are being shaded out will yellow and fall naturally, so look for symptoms on needles on the outside of the canopy.

Management recommendations for these pests can be found in the *Commercial Landscape and Turfgrass Pest Management Handbook*, available at your local U of I Extension Office. *(Phil Nixon and Morton Arboretum staff)*

Home, Yard, and Garden Pest Newsletter is prepared by Extension specialists from the University of Illinois at Urbana-Champaign and the Illinois Natural History Survey. Information for this newsletter is gathered with the help of staff members, Extension field staff, and others. Karel Jacobs and Donna Danielson of The Morton Arboretum also provide information and articles.

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