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Last Issue for 2007

This is the 20th and last issue of the *Home, Yard, and Garden Pest Newsletter* for 2007. Included in this issue is the yearly index to topics covered in this year's issues. The first 2008 issue will be published in the first half of April. If you do not get a resubscription notice, visit the Web site in late winter to be sure to get each issue in a timely manner. That Web site location is <http://hyg.aces.uiuc.edu/welcome.html>.

We appreciate your interest and support this season and welcome comments concerning the newsletter. Contact information for each author is provided at the end of each newsletter. General comments about the newsletter should be directed to me. (*Phil Nixon*)

Plant Clinic Staff Thanks You

I want to take this opportunity to thank our clients for their support this season. As many of you are aware, the clinic is open from May 1 through mid-September, when most outdoor plant problems occur. We are able to offer limited lab help to commercial concerns during the off-season, especially to our greenhouse growers. The Plant Clinic had a very productive season in 2007, and we appreciate the well-prepared samples, supporting information and images, and patience when cultures were slow to grow. The clinic processed 2,303 plant samples in 2007, a volume we had not reached since 1998.

Often the commercial green industry is most interested in laboratory isolations to test for vascular wilt pathogens. In the 2007 season, 57 oak samples were cultured for possible oak wilt infection. Fortunately, only 10 of those were positive for oak wilt. The 57 samples were submitted from 20 different Illinois counties. Also in 2007, 22 elm samples (representing 6 counties) were submitted for Dutch elm disease testing. Twelve of those were positive. There were 48 samples (representing 18 counties) tested for *Verticillium* wilt. *Verticillium* was isolated from Japanese maple, three-flowered maple, amur maple, Norway maple, boxwood, magnolia, red-bud, and fragrant sumac.

We look forward to helping with your plant diagnostic needs in 2008. Watch the Plant Clinic Web site, <http://plantclinic.cropsci.uiuc.edu/>, for helpful information and links. (*Nancy Pataky*)

PLANT DISEASES

Conifer Disease Help

Based on the number of requests for presentations on conifer diseases, it is obvious that many people need help in sorting out the differences. Conifers are usually evergreen, with bald cypress, larch, and dawn redwood the exceptions in Illinois. All the other conifers we grow, such as pine, spruce, fir, and Douglas-fir, hold their needles the year around. It is natural for evergreens to drop third-year needles at some point in the year, usually in autumn, but one- and two-year-old needles are not affected. If they are, your tree may have a problem. Additionally, fall needle drop is often worse on stressed trees.

Many diseases commonly affect conifers in Illinois, including four different needle cast diseases, three needle blights, five shoot and twig blights, two stem diseases, five rusts, one wilt disease, and three root rot diseases. If you are working with evergreens on a regular basis, learn to recognize at least those diseases we see most frequently in Illinois:

Needle cast: Rhizosphaera on spruce

Needle blight: Brown spot and Dothistroma on pine; Cerco-spora on juniper

Shoot/twig blight: Phomopsis on juniper; Diplodia on pine

Stem disease: Cytospora canker of spruce, fir, Douglas-fir; Bot-ryosphaeria on juniper

Rusts: Gymnosporangium rusts, including cedar-apple, cedar-hawthorn, cedar-quince

Wilt disease: pine wilt

Root rots: Phytophthora on juniper, yew, pine; Procerum on white pine

I have a few suggestions on what you can do to work toward determining the cause of your conifer problems. First, take a step back and examine the big picture. The pattern of affected plants in the landscape or planting block is important to diagnosticians. Most diseases begin in hot spots and slowly spread from those sources. It is rare to see a disease affect a line of trees at once or to appear seemingly over night. Look at similar trees in the community to see whether they also show the symptoms. If all the pines in the area are affected, environmental stress is more likely. Weather conditions generally have an equalizing effect.

Next, determine the pattern on one affected plant. A tree that is yellow or off-color on one entire side suggests a stress on that side of the tree. Salt-spray-burn in the winter can be seen as a one-sided burn on evergreens. Just look along our Interstate Highways to see what I mean. On the other hand, if the entire tree declines at once, look at roots or the lower stem as potential sites of problems. You may find that the trunk has been girdled by old nylon twine left at planting, roots have grown around the base of the tree, or a weed trimmer has girdled the trunk. Tip-browning over the entire tree might indicate root rot, drought stress, flooding injury, mechanical injury, or other factors that could affect roots, resulting in discolored new growth. Excessive fertilization can also cause browning of stem and needle tips. Any root damage may be expressed as browning of new growth.

Gather facts about the site, care of the trees, and especially practices or events that may have changed prior to problem expression. It is helpful to know the plant species to determine possible sensitivities. For example, Scotch pines are very susceptible to pine wilt. Find out whether chemicals have been used on the plant or on nearby plants, and determine timing in relation to symptom expression. Usually chemical injury appears soon after chemicals are applied. Was there a late frost just before tip-burn developed on your spruce?

One last step is to look for signs of disease or evidence of insect activity. Disease pathogens often form structures that we call fruiting bodies. These structures are usually about the size of a pinhead and are embedded in affected tissue. They don't rub off easily. Diseases such as *Diplodia* blight on pine or needle cast on spruce have such structures that clinch the diagnosis.

Many good Web sites offer information about conifer diseases. The Extension Web site, <http://www.urbanext.uiuc.edu/focus/>, describes some evergreen tree and shrub problems. Fact sheets about specific diseases can be found at <http://www.ag.uiuc.edu/%7Evista/horticul.htm>. Plant samples and pictures may be taken to your local extension office for diagnostic help and possibly diagnosed through the University of Illinois Extension distance digital diagnostic system, which uses specialists from throughout the state. The University of Illinois Plant Clinic (<http://plantclinic.cropsuiuc.edu>) is another option available from May to September. Early diagnosis is important. Once a positive diagnosis has been made, we can suggest changes in cultural practices, possible spray options, or other ideas to help you manage the problems found on your conifers. (Nancy Pataky)

MAMMALS

Voles

People often refer to voles as meadow mice or "field mice." In North America, there are 19 species; but the

meadow vole, *Microtus pennsylvanicus*; the prairie vole, *Microtus ochrogaster*; and the pine vole, *Microtus pinetorum*, are of the greatest pest significance in turf and landscaped areas. Voles damage turf and gnaw on the trunks and roots of various ornamental plants.

In general, voles are compact rodents with stocky bodies, short legs, and short tails. Their eyes are small, and their ears are partially hidden. They usually are brown or gray, although many color variations exist. The adult vole ranges from 3-1/2 to 5 inches long. Mainly, they eat the stems and leaves of various grasses, but they also consume other vegetation. Voles do not hibernate and are active throughout the year, mostly at dawn and dusk. Most voles do not live for more than a few months. If they are not killed by a predator, a vole can live for up to 2 years.

The meadow vole constructs well-defined, visible surface runways through turf areas measuring about 1-1/2 to 2 inches wide. Vole runways in turf are formed by a combination of the vole's eating the grass blades and its constant traveling over the runway. These creatures also spread excavated dirt from the burrow system in the runway, causing a dirt-bare path in some areas.

The nests of voles may be constructed on the surface, in underground burrows, or beneath the protection of an object lying on the ground. Burrows may be located beneath protective cover such as vegetation or shrubbery, beneath a rock, or beneath raised gardens and planter boxes. Residences with low-lying landscaping, such as arborvitae, creeping yews, junipers, and similar species, are good candidates for vole activity. Burrow entrances measure from 1 to 1-1/2 inches in diameter.

Voles burrow into the root system of ornamental plants, resulting in leaning young trees and dieback on shrubs and young trees. The opening of the burrow is usually near the base of the plant and is easily seen. Bark-feeding at the base of trees and shrubs during the winter may also cause dieback the following summer. Close examination of affected plants shows extensive bark removal. Realize that damage is likely to be more severe during extended cold spells with deep snow cover. In some cases, management may be needed only in the form of fencing or repellents during those times.

As mentioned earlier, voles are most prolific when they have abundant amounts of vegetation and cover. If you eliminate weeds and dense ground cover around lawns, these areas are less able to support voles. Mow lawns and other turf regularly, and clear mulch 3 feet or more from the bases of trees as winter approaches in areas of vole activity. Keep the snow cleared away from the base of young trees.

Voles have many predators, including cats, dogs, weasels, skunks, raccoons, coyotes, foxes, hawks, and owls. Reducing cover in the form of mulch, groundcover plantings, snow, and frequent mowing makes them much more vulnerable to these predators. Typically, removal of cover is sufficient to eliminate vole problems.

Voles are susceptible to other methods of control typically used to control house mice. Snap traps are effective baited with a combination of peanut butter and oatmeal or with apple slices. House mouse poison baits are also effective. Unfortunately, birds and other wildlife can also be killed by these methods unless they are placed in bait boxes that only voles and similar small animals can enter.

Repellents utilizing thiram (also a fungicide) or capsaicin (the “hot” in chilis) as an active ingredient are registered for meadow voles to protect the bases and trunks of trees. These products (or repellents using other ingredients and registered for other garden and turf pests such as rabbits, chipmunks, etc.) may afford very short-term protection, but the use of repellents is generally not recommended due to low efficacy. Finally, no types of frightening agents are effective against voles; and no plant exists which, when planted, will repel or scare voles away from an area. (*Phil Nixon*)

INSECTS

Dormant Oil

Dormant oil sprays are effective against many overwintering insect and mite pests. These sprays are highly refined petroleum oils (paraffinic oils) that are applied when trees and shrubs are dormant. Deciduous trees and shrubs are considered to be dormant from the time that the leaves fall in autumn until bud break in spring. Evergreens are considered to be dormant during that same time period.

Because the plant is dormant, this oil is not as likely to cause damage as during the growing season. Even so, application is recommended to deciduous ornamentals when the temperature will remain above freezing for 24 hours after application. For evergreens, it is recommended that the temperature remain above 40°F for 24 hours after application. In recent years, these oils have become more highly refined, reducing the likelihood of damage. Even so, following these guidelines of application results in the more rapid evaporation of the oil, providing an extra measure of safety.

Dormant oil sprays are effective against many aphid, mite, and scale, killing the overwintering nymph, adult, or exposed eggs. Dormant oil is not effective against scale that overwinter as eggs, including oystershell scale and pine needle scale. It is also not effective against twospotted spider mite because it overwinters beneath the tree.

Oil spray is sold as Sunspray, Volck Oil Spray, Horticultural Oil, and other names. The label typically has a summer oil spray rate and a higher, dormant oil spray rate. Oil sprays are very phytotoxic to Japanese and sugar maple, as well as some other plants. Be sure to check for warnings on the label. (*Phil Nixon*)

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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.

Major authors are Phil Nixon, (217)333-6650, and Fredric Miller, (708)352-0109, entomologists; Nancy Pataky, (217)333-0519, plant pathologist; and Tom Voigt and David Williams, (217)333-0350, and Michelle Weisbrook, (217)244-4397, horticulturists. Phil Nixon is the executive editor of the *Home, Yard, and Garden Pest Newsletter*. This newsletter is written by faculty in the Department of Natural Resources and Environmental Sciences and the Department of Crop Sciences. It is edited by Mary Overmier, Information Technology and Communication Services.

For subscription information, phone (217)333-2666 or (800)345-6087, or e-mail acesnews@uiuc.edu. Web subscriptions are available (<http://www.ag.uiuc.edu/cespubs/hyg>).

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