

No. 21 • October 27, 1999

HORTICULTURE

Winter Educational Meetings

Many educational meetings will be provided at least in part by University of Illinois personnel during the coming months. Attending these meetings is a good way to keep yourself up to date. (Phil Nixon)

November 11: Bistate Horticulture Conference at Holiday Inn Quad Cities Airport in Moline. Advance registration by November 5 is \$30 and includes lunch; registration at the door is \$40 without lunch. Contact (309)796-0512 for information.

November 30-December 2: North Central Turfgrass Exposition at Pheasant Run Resort and ExpoCenter in St. Charles. Advance registration by November 12 is \$135 (\$95 for members); registration at the door is \$165 (\$120 for members). Contact (312)201-0101 for information.

January 5, 2000: Southern Illinois Bedding Plant School at Belleville Area College. 9 a.m.-4 p.m. Registration at the door. Contact Ron Cornwell at (618)692-9434 for information.

January 20-22, 2000: Mid-America Horticultural Trade Show, Mid-Am 2000 at Navy Pier in Chicago. Contact (847)526-2010 for information.

February 29-March 1, 2000: Southern Illinois Grounds Maintenance School at Gateway Convention Center, One Gateway Drive, Collinsville. 8 a.m.-4 p.m. Advance registration required. \$50 fee includes both days. Contact Ron Cornwell at (618)692-9434 for information.

March 10, 2000: English Grounds Maintenance Workshop at Elk Grove Park District Building. Registration required. Contact Jim Schuster for more information; register by calling (708)352-0109 or e-mailing schusterj@mail.aces.edu.

March 10-12, 2000: Illinois State Florists Association Spring Conference and Trade Fair at the Holiday Inn Select in Decatur. Call (815)434-4732 for information.

April 2, 2000: SPANISH Grounds Maintenance Workshop at Cantigny Gardens in Wheaton. Registration required. Contact Jim Schuster for more information; register by calling (708)352-0109 or e-mailing schusterj@mail.aces.edu.

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 two 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 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, 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.

Runways that are broadest and appear especially well worn are usually high-activity areas. These areas become marked by vole urine and feces, and often accumulations of droppings will be found here. As populations rise, many of the individuals within the vole colony use the same major runways. Time spent during the inspection to identify these areas and the locations where runways lead to burrows beneath cover will pay off in proper trap or bait placement and facilitate effective control.

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 only be needed 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 will be less able to support voles. Mow lawns and other turf regularly and clear mulch 3 feet or more from the bases of trees in areas of vole activity. Keep the snow cleared away from the base of young trees.

Mouse snap traps can be used to control a small population by placing the trap perpendicular to the runway with the trigger end in the runway. A peanut butter–oatmeal mixture or apple slices make good baits. Fall and late winter are times when many vole species are easiest to trap. Trapping is not effective in controlling large vole populations because time and labor costs are prohibitive. Traps should be placed beneath cover and as near to the nest zones as possible. To avoid injury to wildlife and pets, place them beneath boxes or protect them in some other way. Placing two to three traps spaced 6 inches apart gives quicker results.

Zinc phosphide is the most commonly used toxicant for vole control. It is a single-dose toxicant available in pelleted and grain bait formulations. The anticoagulant baits used against house mice and rats are also effective in controlling voles, but multiple feedings are needed for most anticoagulants to be effective. One or more baits are registered for controlling voles in many states, but be sure that voles are listed on the rodenticide label prior to use. Baits are potentially hazardous to other mammals and ground-feeding birds, especially waterfowl. Placing bait into burrow openings reduces this hazard.

In addition to hand placement, baits also can be placed in various types of bait containers that will protect bait from moisture and reduce the likelihood of nontarget animals and children accessing it. PVC pipe or water-repellent paper tubes with a bait glued to the inside surface provide effective bait containers. Research has shown that tube sizes of about 5 inches long by 1-1/2 inches in diameter are effective and practical.

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. (*Robert Corrigan of RMC Pest Management Consulting and Phil Nixon*)

PLANT DISEASE

Black Knot of *Prunus* species

We usually see this disease on trees that form stone fruits, but black knot is also a common problem on ornamental *Prunus* species. Hosts include the ornamental plums and cherries that are often planted for their flower and foliage color. The disease usually rears its ugly head in the spring before the newsletter comes out, so we want to warn you about this disease now.

Black knot is caused by a fungus called *Dibotryon morbosum*, which infects new twigs in the spring. There is a slight swelling of the infection site by fall, but it will probably go unnoticed. The following spring (one year after infection), the swellings continue to grow and become roughened. Black knot is named for the elongated, rough, girdling, black swellings on twigs, branches, and sometimes the trunk. The knots become hard, brittle, and coal black. If the fungus growth is on one side of the stem, the stem may be bent at the knot. If the knot girdles the stem, the stem beyond will die. Because black knot galls are perennial, they continue to spread in the branch.

We don't believe that anyone intentionally buys diseased nursery stock, but inspect stems carefully for galls and swellings that may indicate early black knot infection. The older black knots represent at least two years of growth. Never buy trees with visible knots.

If you should find that your trees have this disease, take steps to get it under control using a combination of pruning and fungicide applications. Mark your calendar to prune in February. Remove all knots from the tree and burn, bury, or remove them from the site. Make cuts 4 to 8 inches behind any obvious black knot swellings. Actually, you can prune any time the tree is dormant, but if you wait until February you will be able to see all of the knots. Apply a dormant oil at bud swell.

Most infections occur between bud break and two weeks after bloom when wet conditions are accompanied by temperatures of 55 to 77 degrees F. For effective protection against this fungus, fungicide sprays should be applied as soon as buds open, and they must be

continued every two weeks until about three weeks after petals fall. Many copper fungicides are registered for use against black knot, so pick a formulation that you prefer, carefully reading the label for host and disease clearance. Remember that early-season fungicide sprays prevent new infections but do not stop infections that are already present. That is why we recommend pruning. For more information concerning this disease, consult *Report on Plant Disease* No. 809, Black Knot of Plums and Cherries. (Nancy Pataky)

White Pine Blister Rust in Illinois

We don't see this disease often in Illinois. In fact, it is rare enough that pathologists get excited when they do see it, and it usually means lots of pictures and discussion about the disease. White pine blister rust is a two-host disease requiring a *Ribes* species (currant and gooseberry) and a susceptible pine. In Illinois, you might see this on eastern white pine or possibly limber pine.

Each year, we field telephone questions about white pine blister rust, and usually we convince the callers that the disease is not present. Positive cases have been found in our northern counties. Recently, the disease was found in northern Illinois by one of the State Department of Agriculture inspectors. This situation does not warrant a quarantine, but measures should be taken to control and contain the disease. The high blister-rust hazard areas are in northern climates or high elevation areas where the average temperature in July is below 70 degrees F. That leaves Illinois fairly safe unless weather patterns change drastically.

From a distance, you notice dead branches, yellowing of foliage on a branch, or poor growth on trees with this disease. Closer inspection reveals resinous cankers at the base of the dead branches. In the spring, you can't miss the yellow blisters that arise from the cankered area. The blistered areas remain, but the yellow color may disappear as spores are released.

This disease usually follows a 3- to 6-year cycle between the pine and the *Ribes*. Pine needles are infected in the summer and fall, by rust spores on the *Ribes*. The fungus moves down the pine needles and into the stems where it goes through various growth stages. Eventually (two or three years later) in the spring, rust spores are ready to move back to the susceptible *Ribes* plants. This does not prevent the rust fungus from continuing to develop on the pine. The fungus usually moves only a few hundred meters. If it does not reach an alternate host, the cycle stops.

Most biology students have heard about the removal of *Ribes* species to control this disease. That eradication program was abandoned because it did not work in areas

of high risk, and it was not necessary elsewhere. Should you find yourself dealing with this disease, prune out diseased limbs, prune out lower limbs on young trees to prevent trunk infection that would kill the tree, and consult with university specialists. There are no chemicals that we can recommend in Illinois. Bruce Paulsrud, pesticide applicator training pathology specialist, found these web sites that might also be helpful.

Cornell has a Christmas tree IPM site which covers blister rust at <http://ppathw3.cals.cornell.edu/Trees/WPBRust.html>.

Minnesota's web site discusses the disease at <http://www.mes.umn.edu/Documents/D/G/DG6659.html#pine>.

This disease is not a major problem in Illinois, and we do not have a fact sheet discussing this topic. Clear photographs of the disease can be found in *Diseases of Trees and Shrubs* by Sinclair, Lyon, and Johnson, published by Cornell University Press. (Nancy Pataky)

Winterize To Help Control Plant Disease

Many gardeners wait until a problem occurs, then scramble to correct the situation. The next step usually involves asking for quick chemical cures (which usually do not exist). Consider and ask instead, "What can be done now to help prevent future disease problems in the lawn and garden?" Many disease problems are best controlled with preventive measures. Chemical rescue treatments may act as temporary Band-Aids but are usually not the answer for long-term disease control. These fall lawn and garden cleanup procedures help prepare plants for winter and discourage the development of disease problems.

1. Keep the grass mowed until it stops growing. This practice helps prevent damage from snow mold diseases and winter injury.

2. Prune oak trees now to decrease the risk of oak wilt. Prune from September to early March because pruning during the growing season attracts bark beetles that transmit the oak wilt fungus. Oak wilt is a potential threat in all of Illinois, but more so in the northern areas.

3. Prune trees and shrubs to remove all dead and seriously cankered wood, as well as any crossing and interfering branches. Open up the center of woody plants to help promote faster drying, let in more light, and reduce foliar and stem diseases such as apple scab, powdery mildew, and bacterial spots.

4. Provide suggested winter protection for roses, evergreens, young thin-barked trees, and other sensitive plants.

5. Prune tree and bush fruits according to the recommendations of Extension horticulturists.

6. Where possible, remove and burn, compost, or bury plant debris to help control foliar and stem disease next year. This is extremely important for canker diseases such as *Cytospora* canker or *Botryosphaeria* canker.

7. Look over a variety of seed and nursery catalogs. Select resistant varieties (if they are otherwise horticulturally acceptable) and plant them where you've had problems in the past but have no rotation options. Choosing disease-resistant hybrids, varieties, and species is usually the least expensive and best long-term method of disease control. There are bedding plants that don't have to be covered with powdery mildew. Rust resistance is available in many bedding plants, vegetables, and trees.

8. Make a map of your flower and vegetable gardens. Next year, move related plants to another area of the garden to keep down soilborne pathogens such as *Fusarium*, *Rhizoctonia*, and *Pythium*. This is a great time to make soil amendments to improve soil drainage.

9. Divide perennial flowers where it is appropriate, remove rotted or diseased parts, and replant in a new location.

Although we cannot guarantee complete disease control, these measures are sure to help attain a healthier garden. (Nancy Pataky)

Home, Yard & 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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