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

No. 4 • May 12, 2004

PLANT DISEASES

Vinca Problems

We have had a few calls about problems with vinca groundcover this season. The plants develop blackened stems and die rather rapidly. Management of the problem depends on accurate disease identification. Two fungal diseases of this groundcover have been fairly common in the past few years in Illinois. Because of the similarity of symptoms, it is likely that many cases have been misdiagnosed. **Phoma blight** (Phomopsis blight) is probably the more common of the two. **Rhizoctonia root rot** can produce some very similar symptoms but requires different management.

Phoma blight is caused by the fungus *Phoma exigua* var. *exigua*. It is most common in rainy periods. Shoots turn brown or black, wilt, and die, usually to the soil surface. Black lesions can be found on the stems, girdling and killing all tissue beyond the infection. Within the black lesions, the fungus forms black fruiting bodies the size of a pinhead. The fungus remains on the plant stems under the plant canopy, making this disease very difficult to control. If you can't see the fruiting bodies, try placing affected tissue in a plastic bag with a moist paper towel overnight; then look for the fruiting bodies the next day.

Rhizoctonia root rot causes brown, rotted areas on the roots. Poor root growth results in poor top growth, so dying shoots are prevalent with this disease as well. Black lesions may even appear on the stems. The diagnostic clincher is that fruiting bodies are not found in the lesions on plants infected with *Rhizoctonia*. In addition, this disease affects roots, so closely examine the roots to distinguish between these two diseases.

Both diseases are very difficult to control. Try to avoid overhead watering or excessive watering of vinca beds. It may be helpful to improve air circulation in the area by pruning surrounding plant material and overhanging branches. Because the fungus can survive in the soil on dead plant material, remove fallen leaves and dead tissue. This task may seem to be impossible—to remove all the dead material and still have live plants. Work with plants when they are dry to avoid further spread of the disease. It has been suggested that new plantings be mulched with black plastic perforated every 4 to 6 inches and then covered with pea gravel or ground corncobs. In most cases, we would avoid the plastic mulch suggestion, but this may be the only way to establish a healthy bed of vinca.

Fungicides that may provide some protection against Phoma blight include iprodione (Chipco 26019), azoxystrobin (Heritage), copper hydroxide (Nu-Cop, Ferti-lome Blackspot, Champion, Kocide), thiophanate-methyl (Bonide Bonomyl, Dragon 3336, or Ferti-lome Halt), thiophanate-methyl and mancozeb (Zyban), potassium bicarbonate (Armicarb, Bonide Remedy), fludioxonil (Medallion), and mancozeb (Pentathalon or Protect T/O). Azoxystrobin and thiophanate-methyl are systemic products; iprodione is locally systemic. The other chemicals have a protective–contact mode of action and do not provide the same degree of control of the pathogen without multiple applications.

Fungicides that may slow progress of Rhizoctonia root rot include iprodione (Chipco 26019) and PCNB (Engage, Terraclor). Iprodione has a locally systemic mode of action, and PCNB is a protective–contact fungicide. These are not available for homeowner use.

These diseases are most prevalent in cool, wet conditions; but infection can occur anytime from June to August following periods of cool, wet weather. Try to get an accurate diagnosis now so you are ready to help manage this problem. Rhizoctonia can occur even in dry conditions. These diseases are very persistent in vinca plantings, and their presence is one of the main reasons that growers often seek an alternative groundcover. Stem blight of vinca minor is discussed in *Report on Plant Disease*, no. 640, available at local Illinois Extension offices or on the Internet at **http://www.ag.uiuc.edu/~vista/horticul.htm.** *(Nancy Pataky)*

Anthracnose or Wind Tatters or What?

Each spring, we see many tree samples with blackened, tattered leaf edges. In most cases, the client wants to know whether the problem is infectious and if there is a control. This year is no exception. A few of the likely causes of symptoms include anthracnose, leaf scorch, leaf tatters, herbicide drift, and frost injury.

Anthracnose is a fungal leaf disease that appears in cool, wet spring weather. The fungi involved grow well in cool, wet conditions, while tree growth is slowed. Tender new leaves are most susceptible, thus the problem in spring. In Illinois, we see this disease most frequently on ash, oak, maple, and sycamore. Anthracnose fungi cause leaf spotting and blighting soon after leaf emergence. Sudden shedding of leaves may occur, which causes great concern to the homeowner. If you look closely at the affected leaves, spots are scattered, sometimes on the leaf edges and sometimes between or even on veins. Leaf drop and this scattered pattern can help in diagnosis. Although anthracnose looks ugly, it is not usually a growth problem to the tree. Affected leaves drop and the tree continues to produce new leaves. These emerge in warmer weather and usually escape infection. You can help by providing water and nutrients to help the tree refoliate. Refer to "Anthracnose Diseases of Shade Trees," *Report on Plant Disease,* no. 621, for details about this disease.

Leaf scorch is an environmental condition caused by wind and heat desiccation of the tender new growth in the spring. This problem shows as a rather uniform edge burn to leaves, sometimes moving into interveinal areas of the leaves. Scorch is most intense on the south and west sides of the trees. The problem is prevalent in new plantings, heavy soils, or areas where water extremes are a problem. Rapid scorching may also cause blackened new growth. The new growth is most susceptible to injury as it has not yet developed a thickened cuticle that can help prevent drying. Injury to older leaves is less severe to nonexistent.

Leaf tatters occurs most frequently when scorched tissues are whipped around in strong spring winds. In recent years, tatters has also been used to refer to an unrelated problem on oaks (see issues no. 6, 1999; no. 7, 2003). As with anthracnose, usually trees with scorch or tatters recover with warmer temperatures and adequate water and fertilizer. New planting may be stunted for a while until roots are able to establish on the site. Refer to *Report on Plant Disease,* no. 620, "Leaf Scorch of Woody Plants," for details about this condition.

Herbicide drift may cause injury to new growth of trees. Often the pattern of injury is most helpful in diagnosing herbicide drift and separating this injury from anthracnose, scorch, or tatters. Look at the potential source of chemical, the wind pattern over the past week, and the pattern of affected plants. If herbicides are to blame for tree injury, then other trees, shrubs, and bedding plants are affected in the path of the wind pattern. Damage is most intense on the exposed side of the plants and less so on the downwind side.

Frost or cold injury to trees and shrubs appears suddenly and occurs on succulent new growth more so than older growth. The affected tissue often turns gray–green, or it may quickly turn brown or black. Often the bottom growth escapes injury because heat is held by the plant canopy, while more exposed tissue is injured. Look at weather records to determine the possibility of frost injury. Hot days that promote succulent growth, followed by cold night temperatures can cause some cold injury. *(Nancy Pataky)*

Spring Planting Damping-Off

Damping-off refers to sudden seedling death following infection by fungi. Damping-off may be preemergent or postemergent, referring to infection before or after the seedling emerges from the soil. Conditions that slow plant development but promote fungal growth enhance damping-off problems. Cool, wet soils are ideal for damping-off fungi. If the seed remains below ground for a long period before germination, damping-off is more likely. Poor quality seed is also more susceptible to infection.

All plants are susceptible to damping-off fungi. Plants wilt and die suddenly. Symptoms include rotted roots, stem lesions, and general seedling wilt. Most problems at this time of year are in vegetable plantings and flower beds where plants are grown from seed. You could also see damping-off problems in turf.

Fungi that cause damping-off are common in the soil. Fungal species that may be involved include *Rhizoctonia*, *Pythium*, *Fusarium*, *Phytophthora*, *Sclerotinia*, *Sclerotium*, *Botrytis*, and others. Species of *Pythium*, *Sclerotinia*, and *Phytophthora* are common problems of cool, wet soil. Species of *Rhizoctonia*, *Fusarium*, and *Sclerotium rolfsii* may cause damping-off under warmer and drier conditions.

As these diseases could occur in any soil, how do you avoid damping-off problems? First, start with high-quality seed that germinates and emerges quickly. Choose a site that is well drained and without a history of seedling disease problems. Plant when soil temperatures and moisture conditions favor quick germination and emergence. Using raised beds may help improve soil drainage and increase soil temperatures to allow rapid growth. If possible, buy seeds or transplants that are certified as disease free. Many commercially produced seeds are treated with broad-spectrum fungicides, such as captan, to help protect the seed and young seedlings from fungi. This protection lasts for only a week or two after planting. Fungicides are reg-

istered for controlling seedling diseases on some vegetable crops. Refer to the *2004 Illinois Agricultural Pest Management Handbook*. Many ornamental plants may be treated, as listed by host in the Illinois *2003 Commercial Landscape & Turfgrass Pest Management Handbook* and the 2004 *Home, Yard, and Garden Pest Guide.*

Consult *Report on Plant Disease*, no. 615, "Damping-off and Root Rots of House Plants and Garden Flowers," for more information and pictures. This publication is available on the University of Illinois Vista Web site or in Extension offices. *(Nancy Pataky)*

INSECTS

Scouting Watch

Gypsy moth eggs are hatching in northern Illinois, so it will soon be time to control these insects in Lake County and other areas in northeastern Illinois where the "Slow the Spread" program conducted by the USDA–APHIS and Illinois Department of Agriculture is not treating. Spraying will probably occur during the third or fourth week of May, followed by another application one week later. For updates on Slow the Spread treatments, times, and locations, as well as other gypsy moth information, refer to **http://www.urbanext.uiuc.edu/gypsymoth/default.cfm.** Insecticides recommended for larval control are *Bacillus thuringiensis kurstaki* (Dipel, Thuricide), spinosad (Conserve), tebufenozide (Mimic), and cyfluthrin (Tempo).

Emerald ash borer has recently been found in Indiana; however, its location is in Steuben County, the most northeastern Indiana county. This is about 140 miles from Illinois. Of perhaps more concern is its detection in St. Joseph, Michigan, which is about 70 miles from Illinois. Continue to be vigilant for ash trees dying from the top down with 1/8-inch-diameter, D-shaped emergence holes in the bark. Emerald ash borer emergence occurs in early June, so holes appear at that time. If you locate suspicious trees, contact your local Extension office or the Illinois Department of Agriculture, (800)641-3934. *(Phil Nixon)*

Oystershell Scale

The blooming of Vanhoutte spirea *(Spiraea* x *vanhouttei)* indicates that it is time to take action against the notorious oystershell scale, *Lepidoasaphes ulmi*, because the eggs will be hatching throughout portions of Illinois into young crawlers that are extremely susceptible to insecticide applications. However, as the scales mature later in the season, they are more difficult to control because they form an impenetrable protective covering. Oystershell scale has a wide host range, including ash, birch, dogwood, elm, hemlock, maple, poplar, privet, walnut, and willow. There are two races of oystershell scale—brown and gray banded. The two races differ primarily in their plant host preferences.

Oystershell scale is about 2 to 3 millimeters in length, gray or brown, and shaped like oyster shells (hence the common name). Oystershell scale overwinters as eggs located beneath the female covering. Eggs hatch into young, creamy white to brown crawlers that are active from May through June. The crawlers locate a place to settle and then use their piercing–sucking mouthparts to remove plant fluids, which causes leaf yellowing, plant stunting, and possibly death. Branches or twigs totally encrusted with oystershell scale eventually die. In certain instances, the scale may not kill a tree or shrub but may stress it enough to increase susceptibility to wood-boring insects.

Proper implementation of cultural practices—including irrigation, fertilization, and mulching—go a long way in reducing stress and thus allowing plants to tolerate low to moderate infestations of oystershell scale. However, when scale populations are excessive, then the use of insecticides is warranted to prevent permanent plant damage. Insecticides recommended for managing oystershell scale include acephate (Orthene), carbaryl (Sevin), malathion, insecticidal soap, and horticultural (=summer) oil. All these insecticides should be applied when the crawlers are most active, which increases their overall effectiveness in controlling oystershell scale populations. Visually inspect branches for scale crawlers or use double-sided sticky tape wrapped around selected branches or twigs infested with scales. When crawlers emerge from underneath the covering of the dead female and move around, they get stuck on the tape. Examining the tape regularly can help to determine when the scales are in the stage most susceptible to insecticide spray applications. Repeat applications may be needed 10 to 12 days later, as the eggs don't all hatch at the same time.

The brown-race crawlers of oystershell scale on plants such as dogwood and lilac are generally the first to hatch from eggs and typically are sprayed with an insecticide when Vanhoutte spirea is in full to late bloom. The gray-banded-race crawlers on plants including ash, lilac, and maple tend to hatch from eggs later and are sprayed with an insecticide when Vanhoutte spirea has completed blooming. Vanhoutte spirea is in full to late bloom in central southern Illinois north of I-70 and is completing bloom south of I-64.

Oystershell scale is susceptible to a number of parasitoids and predators (=natural enemies). However, the natural enemies generally appear too late during the season to prevent injury. Additionally, the natural enemies are usually present only when oystershell scale populations are too high. *(Raymond A. Cloyd)*

Research Update: Does Early-Season Defoliation Induce Resistance to Japanese Beetles?

Have you ever considered that insects feeding on plants early in the season may make the plants less susceptible to insects that feed later on? Wounding of leaves by plant-feeding insects such as caterpillars and beetles may induce localized or systemic changes in the levels of plant secondary metabolites or nutrients. This hypothesis was tested by researchers at the University of Kentucky by conducting laboratory no-choice and choice tests, and field evaluations to determine if early-season defoliation of crabapple trees, *Malus* spp., by eastern tent caterpillar, *Malacosoma americanum*, made the trees less palatable or more resistant to Japanese beetle, *Popillia japonica*, feeding.

This is not an unusual phenomenon, as spring defoliators can affect the quality of both undamaged and damaged leaves, as well as new emerging leaves, for subsequent plant-feeding insects later in the season. In fact, previous research has demonstrated that early-season plant-feeders can have positive effects on late-season plant-feeders. For example, fall webworm *(Hyphantria cunea)* grows faster and is larger as a result of feeding on the leaves of red alder *(Alnus rubra)* that had been previously fed upon by western tent caterpillar, *Malacosoma californicum*, compared to leaves that were not damaged. In contrast, late-season caterpillars feeding on spring-defoliated oaks suffered higher mortality on new leaves (regrowth) or insect-damaged leaves than on undamaged (intact) leaves. As both eastern tent caterpillar and Japanese beetle feed primarily on plants in the rose family (Rosaceae), it was logical to conclude that this phenomenon might occur between these two plant-feeding insects.

The bottom line, based on the results from the no-choice and choice tests and field evaluations, was that defoliation of crabapples by eastern tent caterpillars in early spring did not reduce feeding damage by Japanese beetles later in the growing season. *(Raymond A. Cloyd)*

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, Fredric Miller, (708)352-0109, and Raymond Cloyd, (217)244-7218, entomologists; Nancy Pataky, (217)333-0519, plant pathologist; Bruce Paulsrud, (217)244-9646, pesticide applicator training; 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 and typeset by Virginia Cuppernell, 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).

Copyright © 2004, Board of Trustees, University of Illinois