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PLANT DISEASES

English Ivy Leaf Spots

Many landscapes incorporate English ivy, *Hedera helix*, into shady areas. This plant also thrives in full sun, works as a ground cover, or can climb to become a vine. As the plants grow and fill in the landscape area, diseases may cause problems—especially in wet or humid weather and in shady locations.

English ivy is susceptible to two difficult-to-distinguish diseases that cause spots, stem cankers, and thinned areas as plants die. Either disease may occur in Illinois. One is caused by a bacterium and the other by a fungus, so management varies slightly. English ivy in exposed sites may also suffer some winter burn, resulting in necrotic blotches and leaf edge burn. Injury increases disease incidence because it provides more sites for infection.

Bacterial leaf spot and stem canker is the more common disease in Illinois. It thrives in warm, wet weather such as we have experienced in much of the state lately. Bacterial leaf spot first appears as small, circular, dark green, water-soaked (oily) lesions on the leaves. As these enlarge, they have reddish brown to black centers with a water-soaked margin and (sometimes) a yellow halo. The spots also crack with age. The bacterium may cause black cankers on the stems and petioles; those stems die, often with black tips. The bacterial pathogen is easily spread from plant to plant by splashing water.

The fungal leaf spots are caused by a variety of fungal species. They cause round to irregular spots in a variety of colors. Often a series of concentric rings can be seen in the spots. Look closely on the spots for small black specks (pinhead-sized), which are fruiting structures containing spores of fungi. These fruiting bodies may be embedded in the spots (pycnidia), or they may be on the surface and have black hairlike structures called setae (anthracnose). Bacterial spots do not have fruiting structures because bacteria do not form spores. The diseases are easily distinguished in a lab but can be confusing in the field.

If you establish a bed of ivy, look closely at new plants so that you do not introduce disease. These

diseases are very common in Illinois, so if a friend is thinning a planting and sharing plants with you, inspect the established bed for disease problems first. Remove any questionable leaves or stems from transplants. Also, remove old leaves and debris from the beds each spring before new growth starts. Always work with the plants when they are dry to avoid spread of the pathogen. Because these diseases require water on the foliage to infect the blades, water the soil rather than the foliage where possible. Consider using soaker hoses in these beds. Water early in the day so that wet foliage can dry quickly.

We would like to manage these diseases by using resistant varieties. Although work is in progress to identify such varieties, those with good resistance have not been found. Look for disease resistance indicated on tags in the nursery. If leaf spots have been severe in the past, apply fungicides, starting when new leaf growth begins in the spring. Registered chemicals are listed in the *Illinois Commercial Landscape and Turfgrass Pest Management Handbook* and the *Home Yard and Garden Pest Guide*. Because the chemicals are protectants, labels usually specify that they be repeated at 7- to 10-day intervals as long as wet weather persists in the spring and early summer. If you choose a systemic product, you do not have to spray as often. Chemical mobility is listed at the end of the disease chapters in the pest guides listed. A few chemicals are listed for both diseases; if you cannot determine which disease is present, use a product listed for both. Try to improve air movement by thinning the stand and pruning surrounding plants. For more information, consult *Report on Plant Disease (RPD)*, no. 652, "Leaf Spot Diseases of English Ivy." (Nancy Pataky)

More on Fire Blight

Fire blight has been widespread this year and was discussed in issue no. 2 of this newsletter. The disease has continued to develop and has reached severe levels on edible fruit in neighboring states. We usually discuss fire blight on apples, crabapples, and pears. Symptoms include blighted branch tips that die very quickly and completely. Because conditions have been favorable for infection by the causal bacterium for many weeks, we have seen the disease on other

susceptible ornamental hosts that normally escape. Fire blight may infect apple, crabapple, cotoneaster, hawthorn, mountain ash, pear, pyracantha, and quince.

We are long past the time when chemical sprays would help. If weather conditions remain mild and wet, further disease spread may occur. We recommend removing blighted branches as they occur. Preferably, this should be done in dry weather and tissue removed from the site. Remember to disinfect pruners before every cut and to make cuts 10 inches beyond the blighted area. Do not fertilize infected plants now. That would encourage succulent new growth, which is susceptible to infection. (Nancy Pataky)

Vinca Blight and Root Rot

Watch now for vinca stem blight, a fungal disease that affects *Vinca minor*, also known as periwinkle or ground myrtle. This woody-stem vinca is used as a ground cover in landscape beds. The pathogen is a fungus called *Phoma exigua* var. *exigua*. Some older literature calls it *Phomopsis*. Symptoms include dark brown to black girdling lesions on the stems. Within the lesions, the fungus forms black, pinhead-sized fruiting bodies. Diagnostician look for these fruiting bodies to confirm the disease. When stem lesions occur at the ground line, the entire runner dies. Where healthy stems touch the soil or infected plant parts, new lesions may develop. Within a few weeks, the disease may spread to stems and leaves, causing large sections of the bed to die. This disease can be very persistent because the fungus can survive for long periods in moist soil and plant debris typically found under the foliage in a vinca planting.

Vinca blight is most prevalent in cool, wet conditions; but infection can occur anytime from June to August following temporary periods of cool, wet weather. Illinois weather has been ideal for the development of this disease. It is persistent in vinca plantings, a main reason that growers often seek an alternative ground cover. The fungus remains in old runners, hidden below the apparently healthy foliage.

Because the fungus can survive in the soil on dead plant material, remove fallen leaves and dead tissue. This task may seem impossible: You may not be able to remove all the dead material and still have live plants remaining. Work with plants when they are dry to avoid further spread of the disease. Try to avoid overhead watering or excessive watering of vinca beds. Try to improve air circulation by pruning surrounding plants and overhanging branches. It has been suggested that new plantings be mulched with black plastic perforated every 4 to 6 inches and

covered with pea gravel or ground corn cobs. In most cases, we would avoid the plastic mulch; but this may be the only way to establish a healthy bed of vinca.

Fungicides may help contain this disease, and registered chemicals are listed in the pest-control handbooks—*Home, Yard, and Garden Pest Guide* and *Commercial Landscape and Turfgrass Pest Management Handbook*. It may be necessary to remove the dead or diseased plants and then apply a fungicide to stop further spread of the fungus. Stem blight of vinca is discussed in *Report on Plant Disease (RPD)*, no. 640, available on the Web at the VISTA site for University of Illinois Extension publications.

Rhizoctonia root rot of vinca can produce above-ground symptoms nearly identical to Phoma blight. The diagnostic clue is that fruiting bodies are not in the lesions on Rhizoctonia-infected plants. The below-ground difference is that Rhizoctonia causes brown, rotted areas on the roots; Phoma blight does not. Both diseases are difficult to control. Cultural methods are the same. Fungicides are options but do not offer complete control. It may be more difficult to find information on fungicides effective against *Rhizoctonia*. Commercially available fungicides that may slow 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. The thiophanate methyls are all that homeowners have to use, and efficacy is not outstanding. (Nancy Pataky)

Pachysandra Blight

Pachysandra is another popular ground cover that has exhibited disease problems. The wet weather of spring and early summer has encouraged development of many diseases on low-lying plants.

Pachysandra blight is caused by the fungus *Volutella pachysandrae*. The disease begins as brown leaf blotches that develop targetlike rings. The fungus may progress through stems and stolons, causing cankers that girdle and kill stems. Look for wilted pachysandra plants with brown blotches on the leaves. Push back the leaves to find the blotches and cankers on stems. An easy-to-spot diagnostic feature is pink-to-orange spore masses on the underside of leaves or on stems. Spore masses are common in moist weather. Look particularly for *Volutella* blight in dense plantings where thick mulch has been used and conditions are warm and moist. The disease often follows stress, such as winter injury, insect infestation, sunscald, or recent shearing. Remove and destroy any severely infected plants. Do this when

plants are dry to prevent further disease spread.

Because this disease is more likely following injury or stress, try to provide a protected location for pachysandra. This species thrives in shade in a moist, well-drained, acidic soil with plenty of organic matter. Remove dead or diseased plant material and concentrate on improving site conditions. Chemicals may be used as protectants, with repeat applications at 10- to 14-day intervals, depending on the product and weather. Copper, mancozeb, and chlorothalonil are some active ingredients registered for this use on pachysandra. Look in the *Home, Yard, and Garden Pest Guide* and the *Illinois Commercial Landscape and Turfgrass Pest Management Handbook* for specific products. Effective nonchemical controls include keeping insects under control and mulching pachysandra with a material that does not hold excessive moisture. Pruning any surrounding plants for better air movement in the area may also help manage this fungus. Consult *Report on Plant Disease*, no. 649, for more information. (Nancy Pataky)

INSECTS

Euonymus Scale

Euonymus scale, *Unaspis euonymi*, crawlers should be out on plants such as evergreen euonymus or pachysandra, their primary hosts in Illinois. Crawlers resemble tiny yellow spots that move around on leaves or stems. Stressed plants are more susceptible to attack than properly watered and fertilized plants.

Euonymus scale overwinters as a mated female on plant stems. Eggs develop beneath the scale and then hatch over a 2- to 3-week period. Most newly hatched crawlers that migrate on the stem generally start feeding near the base of plants. Crawlers may also infect other nearby plants by being blown around on air currents. Infestations often go undetected until damage is noticeable. Leaves become spotted with yellow or white areas. Plants growing near structures and along foundations appear to be damaged more than those in open areas with sufficient air movement. In addition, variegated forms of euonymus are more susceptible to attack than are green forms.

Heavy infestations can cause complete defoliation or death of a plant. Euonymus scale females are dark brown, flattened, and shaped like an oystershell. The males are elongated, ridged, 1/16 inch long, and whitish. Males are commonly found on leaves, females on stems and along leaf veins. There are two generations per year in Illinois.

Pruning out heavily infested branches is an effective means of quickly reducing the population. Avoid planting *Euonymus japonica* in landscapes as it is extremely susceptible to euonymus scale. *Euonymus alata* is resistant to the scale even when nearby plants are infested. Spraying a pest-control material in early to mid-June, when crawlers are active, minimizes problems later in the season. Pest-control materials recommended include acephate (Orthene), dimethoate (Cygon), insecticidal soap, and summer oil. Check plants regularly for crawlers. Four applications at 10- to 12-day intervals may be warranted.

Euonymus scale is susceptible to a variety of parasitoids and predators, including lady beetles, green lacewing, and predatory mites. However, the natural enemies generally don't cause enough mortality to affect a large infestation. (Raymond Cloyd)

Scouting Watch

Potato leafhoppers are common throughout the state. These elongate, 1/8-inch, green, jumping insects cause heavy damage to red maple, as well as injure sugar maple, redbud, wafer ash, and winged euonymus. Damage to red maple appears as malformed leaves with red, brown, black, and various shades of green mottling at the branch tips. The damage looks similar to that of 2,4-D and other phenoxy herbicides. On other hosts, the damage is much less evident, usually puckered leaves or early fall leaf color. In landscapes, treatment is normally not needed, but it is important to let clientele know that it is not herbicide injury. Treatment with pyrethroids is commonly used in nurseries because potato leafhopper feeding results in greatly reduced stem elongation and overall plant growth. Most pyrethroids provide control for about 2 weeks, but treatment is usually needed only monthly because it takes a couple of weeks more for leafhopper numbers to build up.

Bagworms have hatched in Illinois but are still ballooning from plant to plant in central Illinois. Treatment is appropriate in southern Illinois; it will be most effective through the end of June. Delay treatment in central Illinois until early July. If treatable infestations are found in northern Illinois, treat in mid-July.

Black vine weevil treatment should still be effective in northern Illinois. Reduced control will likely be seen in central and southern Illinois if treated now because eggs are probably already being laid. It only takes a few weeks of feeding for the females' ovaries to mature. However, treatment now should still reduce the amount of leaf-feeding by adults this year.

Earwigs are noticeable in central Illinois and should become so in about a week in northern Illinois. These insects are about 5/8 inch long, brown, and slender, with pincers on the back end. They hide during the day in cracks and crevices, being commonly found under loose bark, in mulches, and under door thresholds. When earwigs are found on a dead or dying tree, clientele may blame them for the tree's death. The earwigs are blameless; they are only taking advantage of the hiding place. Reducing bark mulch and fallen leaves next to the foundation, making sure that door thresholds fit tightly, and caulking cracks in the foundation reduce their numbers indoors. Permethrin sprays along the outside foundation also help keep them out. Earwigs will be present for about a month. (*Phil Nixon and Morton Arboretum*)

Gouty Oak Gall

Gouty oak gall was numerous last year and is still common. They are numerous in Fulton County. Typically, such native insects are very common for about 3 years, followed by low numbers for 7 or 8 years.

Gouty oak gall appears as a woody, gnarled gall up to 2 inches across that circles small branches and can girdle them, killing the branch out past the gall. Its life cycle is 2 years, with the first year less conspicuous on leaves and twigs. The adult stage is a tiny wasp and attacks scarlet, red, pin, and black oak.

On small trees, prune off the galls and destroy them, particularly in the northern two-thirds of Illinois, where they are usually less common. Their killing of branches can cause trees to become misshapen. Pruning may not be practical in southern Illinois, where the galls are more common. Particularly in locations with large numbers of infested oaks

nearby, removing galls may have little effect, with more damage done by the pruning than the galls. Nurseries and others with many small oaks may wish to spray the trees with dimethoate (Cygon) in the spring when leaves are expanding. Treatment may reduce the number of twig galls but won't be noticeable for 2 years because these galls have 2-year life cycles.

In general, if the tree is too tall for you to reach the galls and prune them, the problem can be ignored. Mature trees can contain thousands of galls without major branch loss. Heavily attacked trees appear to be as healthy and long-lived as those that are not attacked. (*Phil Nixon and Rhonda Ferree, Fulton County Extension Unit leader and horticulturist*)

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