



INSECTS

Armyworm

Damage from armyworms in turf in northwestern and southwestern Illinois has been reported. Although common in turf, armyworms rarely become numerous enough to be much of a problem. However, when they are numerous, they can eat off every blade of grass in several thousand square feet of turf per night. In the evening you have nice, green turf, and in the morning all you have are crowns and thatch.

True armyworm caterpillars grow to about 1-1/2 inch long. Mature larvae are brown to black with five orange stripes, one down the back and two on each side. Small caterpillars are dark in color with less noticeable stripes. Caterpillars hide in the thatch during the day and come out to feed at night.

Armyworms spend the winter in the southern United States, and the moths fly north in the spring. Armyworm moths are about 1 inch long with tan to grayish-brown wings. Each front wing has a single white dot near the center. The female moth lays her white eggs in rows or groups on grass blades and rolls the grass blade around them. There are usually two generations per year in Illinois. Moths are very numerous in Illinois in the fall, being one of the last moths seen around lights at night as winter approaches.

In the spring, caterpillars may become numerous in wheat and then move from those fields into nearby turf areas as the wheat matures and turns brown. This is the most common damage scenario in turf, with the damage being in housing areas and golf courses next to farming operations.

The second generation occurs in late summer and is the one damaging turf at this time. Typically, this generation is attacked heavily by tachinid flies. White eggs, usually laid on the back just behind the caterpillar's head, hatch into legless maggots that tunnel into and eat out the caterpillar's insides. When fully grown, the maggots leave the caterpillar carcass to pupate and emerge as adult flies similar in appear-

ance to house flies. Usually at this time of year, it is difficult to find caterpillars without several tachinid eggs on their backs. The rate of parasitism must be low in western Illinois for this insect to be numerous enough to cause damage. Armyworm is also attacked by a disease that causes the caterpillars to die while clutching a grass blade or stem.

As mentioned before, the caterpillars feed at night. Typically they move in large numbers like an army across turf, eating all of the green grass blades. Frequently, they will eat half of a home lawn in one night, eating the rest of it the next night. Because only the blades are eaten, irrigation helps the grass crowns grow new grass blades quickly.

Scout with a disclosing solution. Mix a teaspoon of 5% pyrethrin insecticide or a tablespoon of dish-washing soap in a gallon of water. Distribute this evenly with a watering can or other method over a square foot of turf. Any armyworms or other caterpillars present should come to the surface within a minute or two. Two to three or more caterpillars per square foot are enough to cause damage.

Control can be accomplished with a treatment of bifenthrin (Talstar), carbaryl (Sevin), chlorpyrifos (Dursban), diazinon, halofenozide (Mach 2, Grubex), spinosad (Conserve), trichlorfon (Dylox, Proxol), or other labeled insecticide. Insecticidal nematodes, either *Steinernema carpocapsae* (BioSafe) or *Heterorhabditis bacteriophora* (Cruiser), should also be effective. (Phil Nixon)

Caterpillars in Trees

Several caterpillar species are becoming obvious in trees in Illinois. Fall webworm, with its large silk tents over tree foliage, is common. Brown foliage is being caused on honeylocust by mimosa webworm. Yellownecked caterpillar and walnut caterpillar are numerous on many tree species.

The loss of leaves at this time of year does not harm healthy trees. The leaves have already produced food for the plant, and it is late enough that the loss of leaves should not cause releafing. However, for aesthetic reasons, these caterpillars can be controlled with several labeled insecticides. Realize that large caterpillars may not be killed. (Phil Nixon)

PLANT DISEASES

Plant Clinic Closing Information

School's back in session, plant growth is slowing down, crops are beginning to dry down, and clinic help is leaving, so it must be time for the Plant Clinic to close for the winter. That is exactly what will happen September 15, which is the last day of operation for this year. Any samples that arrive by that date will be completed, but nothing new will be started after September 16. This is a firm deadline because there is no one to process samples after that date. We will once again open May 1, 2001, ready to face another exciting year of new challenges.

If you have a plant problem after the closing date, contact your local Extension office. Extension personnel or others who need help from a specialist can contact the following specialists for telephone questions. *Do not* send samples to these specialists unless instructed to do so. There is no lab service after September 15.

Ornamental Plants

Insect problems: Phil Nixon, 333-6650; Raymond Cloyd, 244-7218

Disease problems: Nancy Pataky, 333-2478; Bruce Paulsrud, 244-9646

Tree/shrub problems: David Williams, 333-2126

Turf problems: Tom Voigt, 333-7847

Herbaceous plant problems: Jim Schmidt, 244-5153

Nematode problems: Dale Edwards, 244-2011

Fruit/Vegetable Plants

Insect problems: Rick Weinzierl, 333-6651

Vegetable and fruit diseases: Mohammad Babadoost, 333-1523

Vegetable production: Chuck Voigt, 333-1969

Food crops: Mosbah Kushad, 244-5691

Nematode problems: Dale Edwards, 244-2011

Weed control: John Masiunas, 244-4469

Foliar Nematodes

Nematodes are microscopic, unsegmented, wormlike animals that live in water, soil, plants, and even in animals. A few nematodes are plant parasitic. Still fewer species feed on the foliage or in the stems of plants. One nematode that we have discussed in detail is pinewood nematode, the pathogen causing pine wilt (refer to issue no. 13). The foliar nematode is a less common plant parasitic nematode in Illinois. We see this occasionally on hostas and some other perennial

garden plants. In recent years, the foliar nematode has been a problem in hosta production, so you will want to become familiar with its symptoms.

The foliar nematodes that we see in Illinois are *Aphelenchoides ritzemabosi* and *A. fragariae*. They only attack plant parts that are above ground, but reports indicate that they can overwinter in the crown of perennials. It is likely that our cold winters and droughty summers are our best management for this nematode, but it is still a serious pathogen in mild, wet years or indoors. The nematodes can be spread in cuttings (stems of chrysanthemums, leaves of African violets) and can move from plant to plant in splashing water or through leaf contact. Although the nematode is inside the foliage, it easily moves out to the leaf surface if water is present. It can move around the leaf and back in leaf pores. Moisture is essential to movement of the nematode. You can guess that the recent mild winter and wet spring and summer have been conducive to the growth of this nematode.

The most common symptom caused by foliar nematodes is a wedge-shaped necrotic area that is bordered by the leaf veins. The area may first appear yellow or reddish but becomes brown. Hostas, ferns, begonias, African violets, and chrysanthemums are a few hosts that may show this symptom. Foliar nematodes may also feed in the buds and growing points of some plants, including chrysanthemums, lilies, African violets, and others. Plants may be stunted and bushy from apical death and regrowth of side buds, and leaves may be crinkled and distorted. There are many hosts of foliar nematodes. Consult *Report on Plant Diseases* No. 1102 for details, but common garden plants often infected include chrysanthemums, columbines, coral bells, and hostas.

This nematode can be seen with a dissecting scope or even a good hand lens. Cut up the dead area with some scissors and soak in a shallow glass dish. Use a light source under the dish and observe the nematodes swimming around in the water. It takes many nematodes to cause injury, so there should be many clear, wormlike animals moving around in the extract. Because nematodes can also help decay plant material, you will want to have the identity of your nematodes confirmed by a nematologist. Our nematologist is Dale Edwards, who can be reached at (217)244-2011.

In a home garden, this nematode might be controlled by removing affected leaves, but more than likely affected plants will need to be rogued. Often winter temperatures take care of the rest. Indoor plantings that are affected also need to be removed

and care taken to avoid splashing between plants when watering. Of course, inspect any new purchases carefully for symptoms of foliar nematodes. Buy only vigorous-looking plants with good foliar color. (*Nancy Pataky*)

Diagnosing Tree Root Problems

We have received many telephone inquiries and several samples of trees that are declining and dying for no apparent reason. We can rule out cankers, vascular wilts, and insect causes, but we cannot assess the root situation from the lab. Here are a few suggestions on factors that might be involved and tips for investigating the possibilities. Just a few of the tree species we have had complaints about include maple, magnolia, birch, and dogwood. In these cases, the entire tree was suddenly affected. When the entire tree is affected, the injury, disease, or insect logically must be affecting the trunk or the roots—areas that could cut off water to the entire tree.

There are, of course, many belowground reasons for the decline of a tree. Drought, flooding, compaction of the root zone, poor soils, planting too deeply, inadequate space for roots, and many more factors could be involved. Often, the diagnosis of such a problem is a process of elimination, ruling out possibilities that might cause similar symptoms. One of the more difficult possibilities to eliminate is root rot. Most gardeners believe that they cannot possibly know the health of a mature tree's roots.

The first sign of any root problem is top decline. Look for a few clues to determine whether a tree is growing well. You can see a tree's annual growth by looking at the trunk cross-section. Most of us have done this as children. We counted the number of rings to tell us how old a tree was when it died. We have also looked at the thickness of these rings to compare relative growth between years. A less destructive way to determine amount of growth is to look at the stems. Follow the stem tip back to the first set of closely aligned rings (about 1/8 inch apart) around the stem. That is 1 year's growth. Continue down the stem to the next set of rings for the next year's growth. Most trees will grow anywhere from 6 inches to 18 inches of twig length in 1 year. Of course, this will vary with the species and whether you are looking at a shady or sunny part of the tree. If the tree has only grown 1 inch of twig growth for the last 2 years and 8 inches 3 years ago, it is safe to say that the tree is under stress and that the stress was initiated 2 years ago. Cankers on the stems, stem-tip dieback, off-color

foliage, early fall color, and early defoliation are also clues to tree stress from underground causes.

To detect the pathogenic wood rots and root rots, look for mushroomlike fungi growing at the base of the tree or shrub. In the case of wood-rot fungi, the conks (also called shelf fungi or fruiting bodies) may be found growing on the trunk or main branches. These are signs of the pathogen. The actual mycelia of the fungus are probably growing in or on the roots or internally in the wood. One of the most common examples is *Ganoderma* root rot, which produces a shelf-type fungal structure at the base of many trees, especially honeylocust. The structure is reddish brown and appears to have been varnished. Its presence indicates that a root rot has invaded. Other fungi may indicate wood rots. Wet weather often triggers the formation of these structures. They could easily be confused with fungi growing on dead organic debris near a tree. If, however, they are growing from the tree itself, they are excellent signs of wood rot or root rot.

You can also do some careful digging in the root zone of a tree to determine the health of the roots. Dig near the drip line at two or three spots. Healthy roots will be brown on the outside but will be white internally or at the very tips of the roots. If the roots have a soft, brown outer layer that easily pulls off the center of the root, then a root rot may be involved. Digging with a hand trowel a few inches below ground around the trunk may reveal girdling roots, mechanical injuries, or other clues to the cause of tree decline.

Some experts say that the presence of conks on a tree or root rot in the root system means that a tree will soon die. That may be the case, but trees and shrubs may survive for many years with wood or root rot. Do not remove a tree simply because it has a conk. Instead, use this as a diagnostic tool in determining the true problem with the tree. If the tree becomes a threat to life or property because of its potential to fall or blow over, remove the tree as soon as possible.

No chemicals will help a tree in decline. Use approved cultural practices to improve tree vitality, including watering in periods of extended drought. Also, cut out dead branches in the dormant season, fertilize in late fall or early spring, and keep traffic off the root system. For very old or very large trees, fertilization and watering may have no benefit. These measures may help the tree continue to live for many years. The wood rot and decline fungi do not have to be fatal. (*Nancy Pataky*)

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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