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

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INSECTS

Flat-Headed Apple Tree Borer

Flat-headed apple tree borer attacks a wide range of trees and shrubs, including plants in the rose family (Rosaceae) such as crabapple, rose, hawthorn, cotoneaster, and pyracantha. Young maple trees are also highly susceptible to borer infestations. Adult beetles attack plants growing in nurseries and landscapes. The adults are 12 mm long, with a somewhat flattened appearance. They are metallic and vary in color from brown to gray. Adult females lay eggs in bark crevices, and the eggs hatch into legless, creamy white larvae that bore through the bark into the cambium. The larvae are 25 mm long when full grown. They produce long, winding, tortuous tunnels in the cambium that can girdle and kill large branches and young trees. Larval activity can usually be detected by the presence of white sap flowing from cracks in the bark. Newly transplanted trees and shrubs are highly susceptible to injury. Eventually, the larvae bore into the heartwood to pupate. Adults that emerge leave a D-shaped hole. There is only one generation per year.

Proper fertilization and irrigation promote healthy, vigorous growth and minimize attacks by the flat-headed apple tree borer. A horticultural wrap of paper or burlap may be useful in protecting young trees and shrubs. In nurseries, clean cultivation, removing grassy weeds by mowing, or using a postemergent herbicide may reduce potential problems with flat-headed apple tree borer. Chemical management consists of spraying plants in late May or early June with chlorpyrifos (Dursban) or lindane. Spray applications made at this time kill eggs and the newly hatched larvae before they bore into trees. *(Raymond Cloyd)*

Euonymus Scale

Euonymus scale crawlers have been found at The Morton Arboretum in northeastern Illinois. They are being found on plants in warmer locations along sunny walls. The crawlers look like tiny yellow spots crawling on the leaves or stems and show up easiest on the leaves. Male adult scales are white, while females are dark brown and oyster-shell shaped. Stressed plants are most susceptible to attack. The scale can cause defoliation and death of the plant. This scale is found most commonly on evergreen euonymus. It is not being found on winged euonymous or burning bush. Pruning out heavily infested branches can help reduce the number of scales. The crawlers are controlled by many insecticides. *(Phil Nixon and The Morton Arboretum)*

Birch Leafminer

Birch leafminer is present throughout the state. In most parts of Illinois, the damage is light enough that it rarely warrants control, but miners can be a major problem in areas of northeastern Illinois.

These sawfly larvae feed between the top and bottom layers of the leaf. The result looks like a large, brown blotch on the leaf. Birch leafminers are usually attracted to healthy, vigorously growing trees that are able to withstand the damage. Usually, trees that are heavily attacked will continue to be heavily attacked for several years in succession, whereas nearby trees may be almost mineless.

Planting resistant varieties such as river birch (*Betula nigra*) and dahurian birch (*Betula davurica*) can reduce problems from this insect. For chemical control, treat at this time when the mines are small and light colored. Systemic insecticides such as dimethoate (Cygon) are particularly effective. *(Phil Nixon and The Morton Arboretum)*

Four-Lined Plant Bug

Four-lined plant bug nymphs are present on mint and various flowers throughout Illinois. Presently, these nymphs are red, roundish, and about the size of a pinhead in central Illinois. As they get older, they approach 1/4 inch long and are reddish with yellow and black markings. The 1/4-inch-long adult has four longitudinal black lines on its yellow or green back.

The nymph and adult feed on leaves, creating brownish to black areas that may be small and round or large and irregularly shaped, depending on the host and the size of the population. Control on mint is problematic as there are very few labeled pesticides for this plant. Pruning out damaged leaves may be the only way to limit damage. Control on flowers and other ornamentals can be achieved with insecticidal soap and several other insecticides. *(Phil Nixon and The Morton Arboretum)*

Spittlebugs

Spittlebug nymphs of both important Illinois species are present on plants throughout the state. The meadow spittlebug has a very large host range and is most important as a pest on flowers and other herbaceous ornamentals. The nymphs feed on plant sap while covered by a white foam that the nymph takes from the posterior of its body and spreads over itself, giving it the common name of spittlebug. The meadow spittlebug nymph is green and eventually grows to about 3/16 inch long. Adult spittlebugs are elongate, jumping insects that are similar in appearance to leafhoppers. Meadow spittlebug adults are colored in various brown shades and patterns. The meadow spittlebug usually causes no damage, but the spittle masses reduce the aesthetic appeal of plants.

Pine spittlebugs are present on pines throughout the state but are particularly numerous in northeastern Illinois this year. As with meadow spittlebug, the nymph forms a spittle mass but the nymph under the spittle is brown. The adult is similar in appearance to meadow spittlebug. Pine spittlebug causes a brownish area on the cambium where it feeds. Heavy infestations can cause enough necrosis to result in branch dieback. Populations that have been seen in Illinois this spring are limited to two or three per foot of branch, much too small to warrant control for damage prevention. Branches that appear almost covered in spittle probably warrant control.

The spittle prevents insecticides from reaching the nymph. If numbers need to be controlled, it's best to wash the spittle off the nymphs before applying an insecticide. With woody plants that allow higher water pressures, the water itself may wash the insects from the plants, eliminating the need for insecticide application. *(Phil Nixon and The Morton Arboretum)*

Gypsy Moth

The Illinois Department of Agriculture, in cooperation with USDA Animal and Plant Health Inspection Service and local communities and agencies, will be applying insecticides for the control of gypsy moth caterpillars in various areas of infestation in northern Illinois over the next few weeks. The insecticide that is usually used is *Bacillus thuringiensis kurstaki*. This bacterial insecticide is very low in toxicity to humans, pets, or anything else that is not a caterpillar. Other caterpillar species on or near the treated trees are likely to be affected by the sprays.

Because gypsy moth is present in northern Illinois, pheromone traps will be set throughout the state this year. The cardboard triangular traps are about 6 inches long and 3 inches wide. They are usually lime green or reddish orange and are sticky on the inside. There is no insecticide in the trap—only a pheromone or scent that attracts the male gypsy moth. Traps will typically be placed about 1 mile apart over the next few weeks and will be removed in July or August. The presence of a moth in the trap does not mean that gypsy moths are present in the area because other moth species sometimes fly into the trap.

Cinnamite: A New Insecticide/Miticide

Cinnamite is a new insecticide/miticide labeled for greenhouse use from Mycotech Corporation. Derived from cinnamon oil, the active ingredient is cinnamaldehyde (30%). Cinnamite is labeled for use against mites and aphids, as well as powdery mildew. It is registered for use on a wide range of crops, including herbs. It has a 4-hour restricted-entry interval (REI). The material is effective against all stages of mites, including eggs, and it has demonstrated efficacy on green peach and melon aphid. The labeled rate for mites and aphids is 85 fluid ounces per 100 gallons of water. Cinnamite works by contact action only, so proper coverage of all plant parts is essential for control. It is fast acting and has short residual activity, which allows plants to be sprayed before shipping. The material has the added benefit of leaving the greenhouse smelling like cinnamon after use. *(Raymond Cloyd)*

HORTICULTURE

Turf in Shade

Most cool-season turfgrasses perform best when they are grown in full sun. Unfortunately, many lawns contain shady areas that present problems for turf managers. Turfgrasses struggle in these environments because there is reduced light and air movement; also, in many cases, the turf must compete with other plants for water and minerals. The result is weak,

stressed turf that lacks traffic or disease tolerance and may be overcome with weeds or moss.

If turf management practices are not modified for shade sites, problems with turf quality are likely. For example, a common management error is fertilizing shade areas at the same nitrogen rates suggested for full sun. In other cases, shaded areas are sodded with Kentucky bluegrasses best suited for planting in full sun. Unfortunately, many sites are simply too shady to support an acceptable quality turf, even if "shade-tolerant" grasses are planted.

Suggestions for Producing Turf in Shaded Areas. Use shade-tolerant turfgrasses. Shade tolerance among cool-season species and cultivars varies and is greatest in fine-leaf fescues and least in Kentucky bluegrass and perennial ryegrasses. Tall fescue has intermediate shade tolerance. Within turfgrass species, there are differences in shade tolerance.

Cultural Recommendations for Turf in Shady Areas.

1. Plant shade-tolerant turfgrass species and cultivars. Remember, shade tolerant does not mean the grass will grow in dense shade.
2. Seed shade-tolerant turfgrasses during the late summer or early autumn.
3. Avoid overfertilizing with nitrogen (apply about half the rate used in sun) and maintain adequate phosphorus and potassium.
4. Mow at the highest recommended height for the turfgrass species.
5. Reduce traffic in shaded areas. Heavy site use and shade turf is not a combination that works.
6. Encourage light and air movement into shaded areas by pruning low-growing limbs and removing shrubs. Removing trees may be the only solution in areas where high-quality turf is a priority.
7. Don't overwater turf in shady areas.

Turf Substitutes. In shady areas incapable of sustaining turf of acceptable quality, plant shade-tolerant ground covers (for example, Japanese spurge, English ivy, hosta, periwinkle, or purpleleaf winter creeper), or use mulches such as wood chips, bark, or some other clean, organic material. Poor soil drainage may be another reason that turf does poorly, and it's very likely the ground cover will have problems with poor soil drainage as well. Also, be aware that some ground covers, such as lily of the valley and goutweed, may become invasive if they are not contained.

Kentucky Bluegrass/Fine Fescue Mixtures. A bluegrass/fine fescue mixture is desirable for dry, shady locations where there is a wide variation in the sunlight's intensity. Fine fescue does not perform well on sports turfs because it has weak traffic tolerance and slow recuperative potential. A traditional shade mixture consists of equal parts of Kentucky bluegrass and fine fescue. Shade-tolerant cultivars of bluegrass (for example, Bensun, Bristol, Eclipse, Glade, Nugget, Touchdown, and Victa) should be considered for the Kentucky bluegrass component of mixtures used in shaded areas.

The fine fescue cultivars that have performed acceptably in Illinois are listed below.

Fine fescue cultivar (type)
Bridgeport (chewings)
Brittany (chewings)
Dawson (slender creeper)
Eco (chewings)
Flyer II (strong creeper)
Jamestown II (chewings)
K-2 (chewings)
Medina (chewings)
Nordic (hard)
Reliant II (hard)
Sandpiper (chewings)
Seabreeze (slender creeper)
Shadow (E) (chewings)
Shadow II (chewings)
SR5100 (chewings)
Tiffany (chewings)
Treazure (chewings)
Victory (E) (chewings)
Victory II (chewings)
(Tom Voigt and Bruce Spangenberg)

PLANT DISEASES

Two Pine Needle Blights

Dothistroma needle blight is a fungal disease of pine that occurs most often on Austrian and ponderosa pine. Both Scotch and red pine are resistant. The disease causes spots and bands on needles, especially in the lower part of the tree. The problem is more intense in a monoculture, such as a nursery or plantation, than in a landscaped area; but we have seen a fair amount of this needle blight the past year or two in landscaped areas.

Symptoms of Dothistroma first occur in the fall but may go unnoticed. In the spring, the tree looks yellowed and sparsely foliated from a distance. Look closely at the needles now for yellow to brown bands or individual spots. If the disease is a problem, you won't have any trouble finding these lesions. Laboratory confirmation relies on finding the diagnostic fruiting bodies and spores within the spots. The fruiting bodies are black, pinhead-sized specks in the needle lesions. You can see these with a hand lens. If all that you see are brown needles without spots, bands, or fruiting bodies, then Dothistroma blight or brown spot is not present. As the disease progresses, needle tips turn brown and fall from the affected needles, leaving green needle bases. Early drop of entire needles is not uncommon.

Cultural controls to promote more rapid drying of foliage may help. Prune surrounding plants, control weeds in the area, and space plants properly. The copper fungicides, including fixed or neutral copper compounds and bordeaux mixtures, are registered for use on pine to control Dothistroma needle blight. Two sprays are recommended, the first when needles are just emerging in mid-May and another when new needles are fully expanded. In the home landscape, some control may be attained by removing fallen needles and helping tree vitality through fertilization and watering practices.

Brown spot needle blight symptoms are nearly identical to those of Dothistroma blight. A different fungus is involved and Scotch pine is the major host; otherwise, spores must be carefully compared to distinguish these two diseases. We generally make the distinction based on the host species. There are more chemical options for preventing brown spot than for Dothistroma. Consult the *Illinois Commercial Landscape & Turfgrass Pest Management Handbook, 1998–1999* or the *Illinois Homeowners' Guide to Pest Management* for chemical options. Applications should be made when needles are half grown and again 30 days later.

For both of these fungal needle blights, control measures are most successful when cultural controls are begun as soon as the disease is identified, with chemical controls started the following spring. For more information on pine needle blights, consult *Report on Plant Disease* No. 624. *(Nancy Pataky)*

Leaf Scorch of Trees

There have been many cases of leaf scorch in Illinois the past week. This disease is a noninfectious, environmental scorch that occurs each year when water cannot be translocated to the foliage as rapidly as it is lost. The causes vary and might include root injury, root rot, poor soil conditions, high winds, transplant shock, flooding, drought, and so forth. The possibilities are explained more completely in *Report on Plant Disease* No. 520.

Symptoms of scorch include browning of the leaf margins as well as tissues between veins. If you have been inspecting trees regularly, you may notice that injury appears first on the newest, most tender growth with the thin cuticle tissue. If you have not been as diligent, you may not notice anything until the entire tree is affected. Often, injury is worse on the south and west sides of the tree that are more exposed to wind and sun. Badly affected leaves drop from the tree, but most scorched leaves hang on and become tattered and torn as the wind whips the scorched areas.

Scorch does not kill a tree. To assess the tree's ability to refoliate, look for live buds on the twigs. A bud is alive if it is green and fresh inside. Pick off a few buds and look at their base to make this observation. Also, try scraping the newest twig growth with your thumbnail. If the wood is green and fresh when scratched, it has a good chance of producing more leaves. If there are no live buds and internal wood tissue is dead, then a more serious problem has affected your tree.

Trees scorched due to weather stress just need a little extra TLC. Water them in periods of low rainfall and consider applying a balanced fertilizer in the fall. Remove any dead wood that may be visible in the trees. Otherwise, turn your attention to other areas of the garden. *(Nancy Pataky)*

Honeysuckle Leaf Blight

A fungal disease called Insolibasidium blight (formerly Herpobasidium blight) has been reported in the western part of the state. The disease occurs only on honeysuckle and only on new growth. Look for new leaves or shoot tips that are crinkled, rolled, or tan. There may be tan lesions with a yellow margin, often at the tips or edges of leaves. Although this disease is most common in the spring, new leaves can continue to be infected through the summer. Summer infections have a white powdery spore covering on the lower side of new leaves. The fungus is favored by moist, moderate temperatures.

Although this disease is not widespread, it can cause heavy blight on susceptible plants. It is easy to

control with Fore or mancozeb fungicides and removal of fallen leaves. *(Nancy Pataky)*

Leaf Spots of English Ivy

Each year, English ivy ground covers are attacked by leaf spots and cankers. There is a common fungal disease as well as a bacterial one, and you need to know the difference to attain adequate disease control.

Bacterial leaf spot and stem canker is the more common disease. It first appears as small, circular, dark green, water-soaked (oily) lesions on the leaves. As these lesions enlarge, they have reddish brown to black centers with a water-soaked margin and sometimes a yellow halo. The spots also crack with age. In warm, wet weather, the bacterium causes black cankers on the stems and petioles; stems die, often with black tips.

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, which are fruiting structures containing spores of fungi. Bacterial spots do not have fruiting structures because bacteria do not form spores.

If you establish a bed of ivy this year, look closely at new plants to be certain that you do not introduce diseased plants. If you receive gift plants from a friend, inspect the established bed for disease problems before taking them. Remove any questionable leaves or stems from transplants. It is also a good idea to remove old leaves and debris from the beds each spring before new growth starts.

Because these diseases require water on the foliage to infect the blades, water the soil rather than the foliage where possible. Water early in the day so wet foliage dries quickly.

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 & Turfgrass Pest Management Handbook, 1998–1999* and the *Illinois Homeowners' Guide to Pest Management*. Because the chemicals are protectants, they usually specify that they be repeated at 7- to 10-day intervals as long as wet weather persists in the spring and early summer. Few chemicals protect plants from bacterial leaf spot and stem canker. The copper compounds and Chipco Aliette may help, but control is not complete. Try to improve air movement in the area by thinning the stand and pruning surrounding plants. Never work with the plants when they are wet. For more information about these diseases, consult *Report on Plant Disease* No. 652, "Leaf Spot Diseases of English Ivy." *(Nancy Pataky)*

Fungicide Update

Many readers have expressed interest in using potassium bicarbonate or sodium bicarbonate as preventive fungicides. As a result, we have devoted several articles (Issues 2 and 3 in 1997 and Issue 9 in 1998) to this topic but have been unable to provide information about legal and available products or about how well the products might work.

Recently, however, I received information about a new product called Remedy, which is a dry formulation containing 82% potassium bicarbonate as the active ingredient. The product is now being marketed by Bonide Products, Inc., and is available to garden centers and other stores carrying the Bonide line of pesticides. A few calls in the Champaign–Urbana area revealed that Remedy is not yet on the shelves.

A little background on the bicarbonates. Although I have not been able to find published research dealing specifically with Remedy, I have found a scattering of articles about sodium, potassium, and ammonium bicarbonates. Most often, these compounds were tested against black spot of rose and various powdery mildew pathogens of ornamentals. Although most of the research indicates that bicarbonates alone reduce disease compared to untreated plants, it also indicates that addition of a horticultural summer oil does a much better job. What are the drawbacks to these products and the published research? First, the mixing rate is critical because even a small change in spray concentration can lead to reduced control (lower concentration) or plant damage (higher concentration). Second, the bicarbonates are seldom compared to available, conventional fungicides so at this point it is impossible to say that Remedy is more or less effective than products currently being used.

The Remedy label states that it controls black spot, downy mildew, powdery mildew, botrytis blight, scab, and a variety of other foliar diseases. It is labeled for use on many woody and herbaceous ornamentals and for many garden plants. As mentioned above, the bicarbonates tend to work much better when used with a horticultural summer oil. However, the Remedy label clearly states: "Do not mix with other pesticide products or spray adjuvants." This appears to be a problem. However, I spoke with a technical

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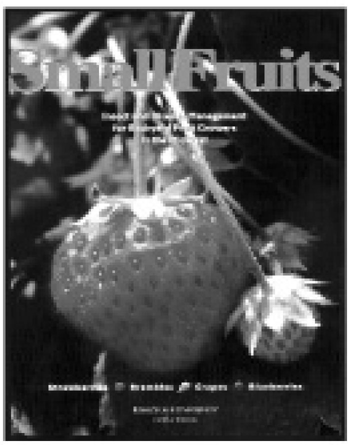

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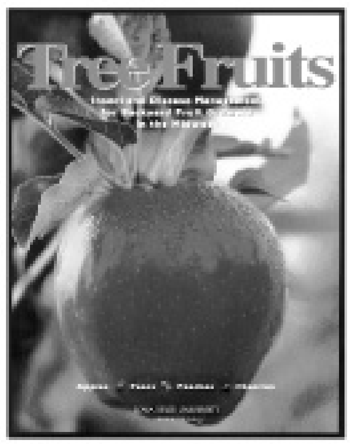

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representative who assured me that the Remedy formulation contains a dry spreader/sticker, which provides an increase in effectiveness similar to that reported in the literature.

Even though the active ingredient for Remedy (potassium bicarbonate) is considered to be relatively nontoxic (source: MSDS sheet, Cornell University), it is still a pesticide and must be used responsibly and with respect. As with all pesticides, remember to read and follow all label precautions, directions, and other instructions. *(Bruce Paulsrud)*

Whoops!

In last week's issue of the newsletter, euonymous webworm was said to grow up to 4 or 5 inches long. That should have read 4/5 inch long!

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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