



Chinch bugs



Mole cricket



White grub



Green June beetle



True armyworm



Ground pearls

Six Turf Pests

The turf manager must be able to recognize an insect problem, be familiar with the stages of an insect's life cycle during which damage may occur and know when to apply treatment for most effective control.

Grubworms are the larvae of hard-shelled beetles. They are white to off-white in color and have brown heads. When turf is rolled back, disturbed grubs may be found lying in a C-shaped position in the soil around the root area of the grass. Common grubs that cause much damage are Japanese beetles, Northern masked chafer and the June beetle. Damage in turf by grubs appears as brown patches of dead grass which can be rolled back like a carpet. Generally, damage is noticeable from May on.

Ground mole activity in turf is a good indication grubs are present, since moles feed on grubs. The best way to tell if you have grubs is to examine the soil from May to September. To do this, cut a foot-square flap on the three sides and roll the grass back so soil at the root area can be observed. Do this in several places in the turf. A treatment is needed when you find an average of two or more grubs per square foot, according to Richard L. Miller entomologist at Ohio State University.

The adults of different species of June beetles which vary from light brown to nearly black, emerge from the soil during May and June. Adults feed at night on the foliage of such trees as oak, hickory, walnut, birch, elm, willow and many others. During the day they hide in the soil, usually a grass area, where the females lay their eggs. Eggs of these beetles, when first laid, are pearly white and elongated. They become swollen and almost spherical six to seven days later. Then they hatch into tiny grubs in about three to four weeks.

The young grubs feed on decaying and living vegetable matter in the soil during the first summer. As cold weather approaches, they burrow deeper into the soil, remaining

there until the spring of the following year when they return near the surface to continue their feeding on the roots of the plants.

Grubs feed vigorously and grow rapidly throughout the second summer, Miller said, causing most of the damage to turf during this year. About mid-October, they burrow into the soil to spend the second winter. In the following spring they move to the surface once more and feed for a month or two on the roots of grasses and other plants. About the middle of June they move downward in the soil and change to the pupal stage. After spending a month as pupae, they change to adults but remain in their pupal chamber throughout fall and winter and emerge as adults the following May and June.

Female beetles begin to lay eggs in the soil shortly after emerging, thus starting another cycle. Apply recommended insecticides, such as diazinon, dursban, dylox or proxol in late March or early April, or in the fall before the ground freezes. Water the turf after treatment. One treatment properly applied will last five years or more, Miller said.

Chinch bugs are more likely to be serious in bentgrass turf, however, bluegrass is also attacked. Damage to turf by chinch bugs is caused by the young bugs or nymphs. These bugs, when full-grown, are about ¼-inch long and black with a white spot on their back between their wings. They suck juices from the grass, causing it to turn brown and eventually die. Chinch bug infested turf may have many large, irregular dead patches. Look for the bugs in the circle of grass which has turned yellow around these dead patches.

Two generations of chinch bugs appear annually, in the Midwest at least, with nymphs being present in the lawn the last half of June, first generation, and again the last half of August, second generation. Two treatments are probably needed to keep the damage to a minimum in turf where the insect is a problem. Apply the first treatment in early

June and the second in early August. Since the bugs are usually concealed in the thatch, it is best to water the lawn before applying treatment. Use any one of a number of insecticides, including sevin, diazinon, spectracide, ethion, aspon, dursban or trithion.

Mole crickets are light brown in color and are adapted for digging. The stout and shovel-like forelegs allow them to dig rapidly, says Howard B. Sprague in his *Turf Management Handbook*. Besides feeding on roots, they also burrow the soil uprooting seedlings and the soils dries out faster. A single cricket can damage several yards of a newly seeded lawn in a night. It is a pest primarily in the Southeast. Eggs are laid three to eight inches deep in the soil where they hatch to form nymphs that burrow and feed in the soil. Adults live for several months. If a locality has a record of mole cricket damage, it would be well to apply a preventive treatment rather than wait for damage to appear. Suggested insecticides for control include diazinon, baygon and dursban.

Ground pearls are a pest of centipede grass and bermudagrass. They feed on grass roots to which they are attached by their needle-like mouth parts, according to John H. Madison in his *Practical Turf Management*. The young stages are small and relatively undifferentiated. The insect secretes a white, waxy sac about its body giving it the appearance of a small pearl. The pest causes irregular dead patches in the turf and is difficult to control.

Armyworms are named because of their habits. They move across the turf in large numbers and eat everything. The two common armyworms are fall and true armyworms, both of which can do serious harm to turf. Infestations noted early may appear as a small, webbed area in the turf. As they develop, the turf may be eaten to the soil. Suggested insecticides include sevin, proxol, dylox, diazinon or spectracide. □