

Applicator's Log

Controlling Mole Crickets

By Pat Cobb, Ph.D.

Mole crickets are the number one destructive insect pests of turf in the Southeastern United States. Hybrid and common bermudagrasses, bahiagrass, zoysia and centipedegrasses are most severely damaged. Each year pest mole crickets extend their range west and slightly north.

Life History and Damage

Pest mole crickets were imported accidentally into the Southeast from South America in the early 1900s. There are three pest species: (1) southern mole crickets, which are predators, and (2) tawny and (3) short-winged mole crickets, which are plant feeders. A fourth species, the northern mole cricket, is a native species found in much of the eastern United States, but at present, it is not considered a pest.

Mole crickets are active at night in the soil and on the turf surface. They have spade-like front legs adapted for digging, large beady eyes, and are 1 to 1.25 inches long when fully grown. As mole crickets tunnel through the soil, they *uproot grass* plants, which dry out and die.

Southern. Southern mole crickets are usually gray with white spots or mottling on the top of the area behind the head. Their digging claws have a U-shaped space between them.

Tawny. Tawny mole crickets are usually tan rather than gray. There is a V-shaped space between their digging claws. Tawny mole cricket feeding-damage can result in sudden, *severe turf loss* during late summer and fall in untreated areas. Most of the money spent on mole cricket control is directed toward tawny mole crickets.

Short-winged. Short-winged mole crickets never develop functional wings. They are sometimes mistaken for large tawny mole cricket nymphs (immatures). Short-winged mole crickets can be *serious pests* in areas they infest. But, they have not spread rapidly beyond points of entry along the Atlantic Coast because they never fly.



The four species of mole crickets found in the Southeast are (from left to right) the northern, the short-winged, the southern and the tawny. Photo courtesy: Pat Cobb.

Life Cycle. Mole crickets spend the *winter* in burrows in the soil. When soil warms in the spring and night air temperatures approach 60 degrees F, mole crickets become active near the soil surface. In fact, if air temperatures during winter are close to 60 degrees, mole crickets become active.

In *spring*, little feeding by adult mole crickets takes place. Activity increases and adults fly and *mate*.

Female mole crickets *lay eggs* in chambers in the soil in *spring* and *early summer*. Tawny mole cricket eggs begin to *hatch* during May and early June in the mid-South — earlier farther south.

There is one generation a year in the middle part of the region; 1 1/2 or 2 generations, in south Florida. Hatching is spread over several weeks.

Nymph damage to grass is usually obvious by mid to late *July* (mid-South). By this time, the nymphs are large enough to cause noticeable feeding and tunneling damage.

Most tawny mole crickets reach maturity by *fall* and fly again. However, mating is not known to occur during the late season.

Control

Mole cricket control depends on the season of the year and life stages the pests are in at the time. Mole cricket control depends on an annual, *well-timed plan*. Timing of controls and cultural practices are as important as the choice of insecticides.

Treatments. Over-wintered mole crickets become active in March and

April. Treatment at this time is optional, except in highly maintained turf areas of sod fields. Early spring treatment reduces tunneling damage but usually does not replace treatment later in the season.

The major effort in mole cricket control with *insecticides* should be directed toward young nymphs. Treatment of the more vulnerable, younger nymphs in early season is more effective than later treatments on larger mole crickets. Parasitic *nematodes* that attack adult mole crickets can be applied in the spring before female mole crickets lay eggs.

If tawny mole crickets are active in an area during March, April and May, there are usually treatable populations of new-generation nymphs that hatch there later in the spring and

FIELD MARKING PAINT

TEMP-STRIPE

- Temporary field paint
- Easy removal following the game
- Will hold up to foul weather
- Proven effective
- Great for multipurpose fields
- Apply like normal paints

PRO-STRIPE

- Long lasting field paint
- Available in team colors and brilliant white
- Dilutable up to 3:1
- For use on both natural and artificial turf
- Will not harm grass



J.C. WHITLAM MANUFACTURING CO.
200 W. Walnut St., P.O. Box 380
Wadsworth, OH 44282-0380 Made in U.S.A.
CALL: 1-800-321-8358
CONTACT: STEVE CAREY

early summer. By the time mole cricket damage is visible, control efforts are more difficult.

Assess Early. An assessment of spring tunneling activity on athletic fields, golf courses, landscapes and other large turf areas can aid in reducing the area treated and pesticide usage when new-generation nymphs hatch later.

Map larger turf areas in the spring, showing areas of over-wintered mole cricket activity. Landscape maps and maps of fairways or fields can be made from property or irrigation blueprints, scorecards, computer or GPS-generated. Landscape plantings or distance markers can be drawn in as landmarks. Target these sites for treatment when nymphs are present. Mole

cricket mapping saves labor and usually reduces pesticide usage and labor costs.

Verify the presence of young nymphs by monitoring the area with the *soap-flush* technique. Mix 1 to 2 tablespoons of lemon-scented liquid dish-washing detergent in a gallon of water. Pour the mixture onto a square foot or two of infested area. Mole crickets that are present will surface in a few minutes. This is best done early or late in the day. Irrigate the area after flushing to minimize sun scalding of the turf. This technique can be used at other times during the year (1) to confirm the presence of mole crickets, (2) to determine species present and (3) to monitor development.

Athletic Fields. Give special consideration to areas like athletic fields and parks where people traffic influences application timing. Monitoring these areas is of extreme importance, but scheduling treatment is not always easy. Choose a two- or three-day period when areas are not in use during the time when insecticides are best applied. Make applications late in the day, and follow watering instructions on the label.

Manage Water. Water management can determine the success or failure of controls. Mole crickets prefer to be active in the top two inches of soil. If soil is extremely dry or wet, mole crickets move deeper until conditions improve near the surface.

Prewatering dry turf several hours before treatment encourages mole crickets to move upward. Irrigation after treatment depends upon the product used and instructions on the label.

On athletic fields and parks, managers are often encouraged to irrigate normally at least twice (as is done during regular management of turf at the site) before play resumes.

Specific Treatments. Most states in the Southeast have written recommendations for mole cricket control that are based on mole cricket developmental stages. Check with your local county agent's office or your land-grant university turf specialists for specific information.

Dr. Patricia P. Cobb is professor and extension entomologist at Auburn University, Alabama.



Every year, thousands of kids turn this card into a diploma.

These days, too many serious things can interfere with a child's education. Drugs. Gangs. Violence. At the Boys & Girls Clubs, more and more kids are finding the support they need to stay out of trouble and stay in school. And the longer they stay in, the better their chances of walking out with a diploma. To learn how you can help the Boys & Girls Clubs, call: **1-800-854-CLUB.**

The Positive Place For Kids