

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

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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.



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While checking out possibilities for Seminar on Wheels tours, some Conference Committee members took in some of baseball's pre-season activity at Baseball City USA. Photos courtesy: Trusty & Associates.

STMA Goes to Disney World!

The STMA Board and Conference Committee are "In Action," and plans are well underway for STMA's 9th Annual Conference and Exhibition, which will be held on Disney properties in Florida on January 14-18, 1998. Much of the time at the March board meeting was spent checking out two key facilities: the conference's headquarters hotel, Disney's Coronado Springs Resort, and the new Walt Disney World Sports Complex, site of several other conference activities.

This may have been the first "hard hat" meeting session in STMA history, because parts of both of the two major facilities were still under construction and hard hats were mandatory for the inspection tours.

The Coronado Springs Resort's impressive meeting facilities and guest rooms are just part of the overall picture. Though the complex is large, it's designed to allow various conference groups to cluster their activities, combining the feel and convenience of a smaller hotel with all the advantages of a major Disney property. Beyond the

welcoming entry lies a central lake, encircled by a walking trail. There are several swimming pools, a white-sand beach, both casual and formal dining areas, and lots of great spots to relax for that networking that is always a conference highlight.

Then there's the awesome Walt Disney World Sports Complex. There are venues for over 30 sports on this 200-acre site, all with top-notch facilities that reflect the Disney dedication to quality.

The STMA Board took a short form of the tour that will be part of the conference. The ballpark field was looking great and was nearly ready to host the March 28th Atlanta Braves pre-season game. From the top level of the 7,500-seat ballpark stadium, you can catch a glimpse of the major Disney attractions and oversee the expanse of the complex itself.

Next to the ballpark is the field house, which houses six full-size, hardwood basketball courts with main-floor seating for 5,000 spectators. Just outside the ballpark is the baseball quadruplex with major league size fields. Next to it is the expanse of turf

that makes up the "town green" and includes a 5,000-square-foot pavilion. On the opposite side of the town green are two youth baseball fields, with the softball quadruplex on the far side of them. The site also includes four multi-purpose fields with international soccer dimensions. And then there are the tennis complex, the track and field complex, and the beach volleyball courts and ... so much more! (Watch for an article featuring the Walt Disney World Sports Complex in next month's issue.)

Another segment of the facility check was a stop at Disney's horticultural center to check out possibilities for Seminar on Wheels tours. Some of the Conference Committee members also headed out and about the surrounding area to view other possible tour sites. They just happened to take in part of baseball's pre-season activity, including the chance to see Deion Sanders at bat at Baseball City USA.

There are so many exciting things in the works for the 1998 Conference that the committee just had to share a few of them here. So mark your calendar right now — and stay tuned for more details coming soon.

Welcome, KAFMO!

STMA welcomes its newest affiliated chapter: Keystone Athletic Field Managers Organization (KAFMO Chapter STMA), which has completed all requirements for affiliation and was officially recognized as an affiliated chapter by the STMA Board at the March 14-15, 1997, board meeting.

KAFMO's next event, "A Field Day with Floyd Perry," sponsored by the chapter, will include members of Pennsylvania Recreation and Park Society. One field day will take place on May 15 in central Pennsylvania at Hampton Township on Harrisburg's west shore. A second field day will be held on May 16 in western Pennsylvania at Slippery Rock State University. Registration for each field day will begin at 8:30 a.m., with clinic sessions running from 9 a.m. to 3 p.m. For more details on these field days, contact Don Fowler at (717) 485-4709.

For more information on the KAFMO Chapter STMA or other upcoming events, contact Dan Douglas, Reading Phillies Baseball Club, at (610) 375-8469, extension 212.

STMA Chapter News

Florida Chapter #1: The Florida Chapter's next meeting will be an aerification and thatch seminar — with equipment demonstrations and educational classes. This seminar will be

held June 4 at Miami Dade Community College, South Campus, in conjunction with the Dade County Cooperative Extension Service.

For more information, contact John Mascaro at (954) 938-7477.

Midwest Chapter: The Midwest Chapter will meet on June 12 at Demaree Stadium of Merrillville High School, Merrillville, Indiana. STMA's 1994 Football Field of the Year. Activities will include a tour of the facility and sessions on field construction and maintenance.

For more information, call The Chapter Hotline (847) 439-4727.

Colorado Chapter: The Colorado Chapter will hold its next meeting on Friday June 13 at Sky Sox Stadium. The meeting will open with Dave Rulli's President's Message and an introduction by Mark Leasure. Activities will include vendor talks, a session on infield mix presented by Ken Norkosky, and a tour of the stadium. Attendees will also enjoy a cook-out and the Sky Sox baseball game.

The chapter also will hold a meeting on Friday July 18 at Wagner Park in Aspen, Colorado, the home of the World Rugby Tournament. Further details on this meeting will be announced soon.

For more information, call the 24-Hour CSTMA Chapter Hotline/FAX: (303) 438-9645.

Minnesota Chapter: The Minnesota Chapter will hold its 3rd Annual Seminar on Wheels on July 16. While the complete site list is yet to be announced, the schedule already includes ending the day with a tailgate party and St. Paul Saints game.

For more information, contact Connie Rudolph at (612) 644-0639.

Iowa Sports Turf Managers Association: The Iowa STMA will hold a baseball workshop from 1 p.m. to 4:30 p.m. on August 8 at Sec Taylor Stadium in Des Moines. Sessions will cover daily and post-season maintenance of the mound, plate and infield; fertility; building your own low-cost equipment; and repair of turf areas, including overseeding, seed pre-germi-



The Walt Disney World Sports Complex features venues for over 30 sports, all reflecting Disney's dedication to quality.

nation, sod and plugs.

For more information, contact Lori Westrum at The Turf Office at (515) 232-8222 (phone) or (515) 232-8228 (fax).

Southern California Chapter: For information on the Southern California Chapter or pending activities, contact Chris Bunnell at (619) 432-2421.

STMA Chapters on the Grow

MAFMO: The Mid-Atlantic Athletic Field Managers Organization (MAFMO) is an active group currently working toward STMA affiliation.

MAFMO will team up with Toro for an irrigation seminar to be held on Wednesday May 21 from 8 a.m. to 3 p.m. at Cedar Lane Park in Columbia, Maryland. Sessions will cover how to assess your irrigation needs, design your system, calculate cost, install the system and troubleshoot problems. The seminar will include both classroom instruction and hands-on demonstrations and troubleshooting. Space is limited to ensure top-quality instruction, so act now.

For more information, contact The Hotline: (410) 290-5652.

Arizona: For information on the Sports Turf Managers Association of Arizona or upcoming events, contact Bill Murphy, City of Scottsdale Parks and Recreation Department, at (602) 994-7954.

Great Plains STMA: For information on the Great Plains Sports Turf Managers Association or upcoming events, contact Mark Schimming, City of Wichita, at (316) 337-9123.

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The Surface Irrigation Manual, by Dr. Charles Burt. The text delves in-depth into the proper design and operation of surface irrigation systems. Also covers subjects such as soil types, salinity, surge flow and infiltration. Indispensable aid for farming, educators in agriculture; irrigation design professionals for government agencies working with the agriculture industry. 400 pp 4007 Price: \$49.50

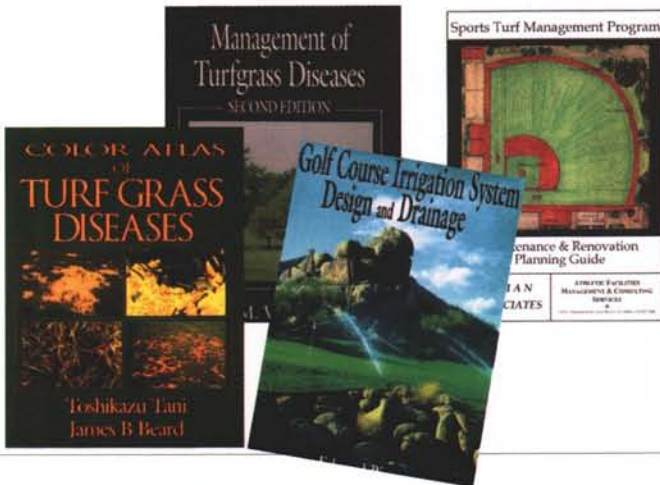
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Sports Turf Management Program—Maintenance & Renovation Planning Guide by Ashman & Associates. This manual was developed to provide a coherent plan for the management of the baseball field playing surface. This manual provides operational guidelines for the grounds crew to use as part of the maintenance plan. Enhances the "playing conditions" of the field by elevating the maintenance standards to the highest level possible. Complete descriptions of the maintenance protocol and identification of key issues to be discussed before starting objective maintenance procedures. This book provides a plan of action outlining the tasks to be completed and benchmarks to measure the progress of the program. 160 pp. 4024 \$105.00

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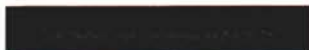
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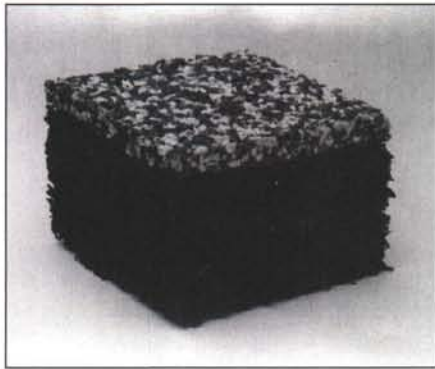
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