

The mole cricket plague

Tests at 200 courses show positive results with nematodes

By HAL PHILLIPS

TAMPA, Fla. — The use of nematodes to fight mole crickets is gaining acceptance in Florida, where more than 120 superintendents have experimented with this cutting-edge technology.

"We've observed more than 200 golf course applications at approximately 125 different sites," said Cameron McCaskill, president of BioControl, Inc., a Tampa-based firm specializing in cricket-combating nematodes.

"We began the commercial distribution of the nematode in late 1992, and from the feedback we've received in our first full year of business, I'd say 80 to 90 percent of our customers are satisfied with the results."

About 10 years ago, the federal Environmental Protection Agency banned persistent chlorinated hydrocarbons, the superintendent's best weapon against mole crickets. Since then, golf course managers from Houston to Raleigh, Knoxville to Key

West have fought a protracted, largely unsuccessful battle against this burrowing pest.

While McCaskill hastened to point out that nothing will ever completely kill off the mole cricket, nematodes are most effective when used in concert with applications of two existing chemicals, Orthine and Othanol.

Nematodes are most effective against the adult mole cricket, while the chemicals are better suited to elimination

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Research promising, but nothing yet said 'revolutionary'

By DR. MIKE KENNA

The quest for alternative control methods of Tawny and Southern mole crickets has turned up several promising methods, but nothing that has revolutionized the way golf course superintendents deal with these devastating pests.

Dr. Howard Frank, University of Florida, has tried to fight mole crickets with naturally occurring enemies, such as nematodes, flies, and beetles. Dr. Frank's first attempts resulted in the introduction of the South American nematode, *Steinernema scapterisci*, which was inoculated on to six golf courses in south Florida.

Small fenced in areas, with battery operated devices that mimicked the call of crickets, were inoculated with the best nematodes identified by Dr. Frank. The cricket callers attracted crickets to the inoculated area. Once in the fenced area, the crickets would have to burrow through the nematode inoculated soil to escape. The nematodes eventually kill the host cricket and leave eggs in the soil for future inoculations.

"The evaluation showed that the nematode infected and killed more crickets, but did not build up large populations in turf," reported Dr. Frank. "However, immediate control within one week of application was 62 percent for adult crickets, therefore, the nematode may have considerable potential as a biopesticide for use in repeated applications."

More recently, Dr. Frank and his associates have introduced a Brazilian fly, *Ormia depleta*, into Florida. "Its population has grown and spread to at least 30 counties in Florida," said Dr. Frank. Trap-catches of the Tawny mole crickets indicate reductions of 36, 74, and 95 percent at three sites where fly populations have established. "These differing percentages seem to be attributable to differences in nectar (energy) availability to adult flies," suggested Dr. Frank. New research has been proposed to include specific nectar-producing plants in to the golf course landscape that would provide the necessary energy and habitat for the fly.

Yet another promising predator that Dr. Frank and his associates have identified is the South American bombardier beetle, *Pheropsophus aequinoctialis*, which comes from the homelands of mole crickets. A proposed research project suggested by the group

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Mole crickets thrive in S'east, not bothered by natural enemies

In the Southeastern United States, the mole cricket has become "Public Pest No. 1" because it has no natural enemies.

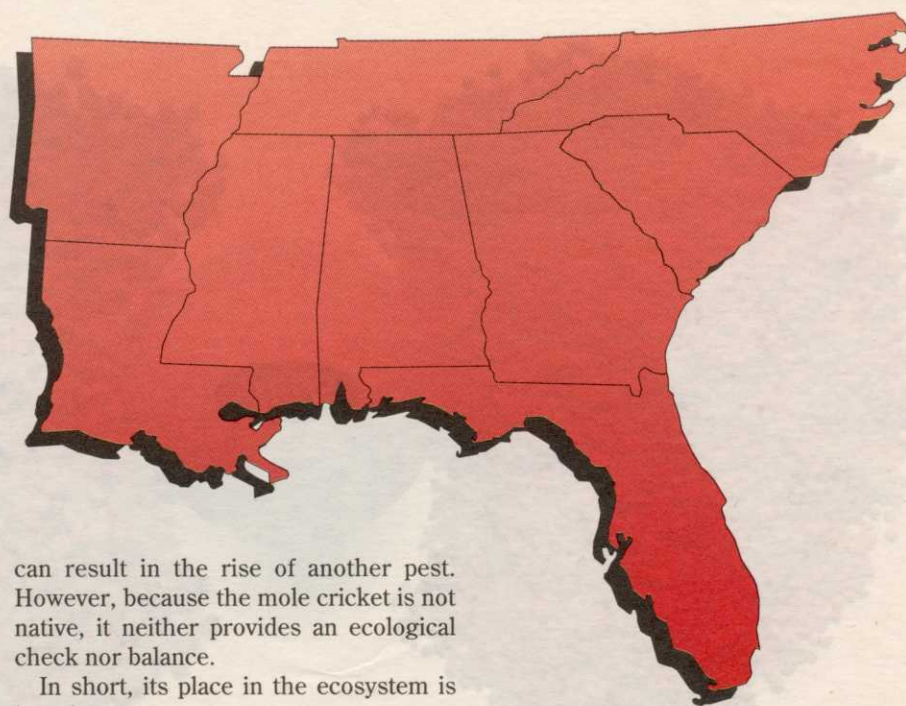
This burrowing pain in the drain has no native environmental foes because the species was introduced to the North American continent from Uruguay. They were first spotted in the Sea Island, Ga., area at the turn of the century.

"They came over in the ballast of ships, but none of their natural enemies were brought with them," explained Cameron McCaskill, president of Tampa-based BioControl, Inc., a firm that specializes in the biological combat of mole crickets.

"Mole crickets have no natural enemies on this continent. Armadillos like to eat them, but it wouldn't be very practical to let armadillos run wild on a golf course.

"Some birds will eat mole crickets, but only as a last resort."

In some cases, elimination — or attempted elimination — of a certain species



can result in the rise of another pest. However, because the mole cricket is not native, it neither provides an ecological check nor balance.

In short, its place in the ecosystem is largely extraneous.

"If the mole cricket were completely eliminated tomorrow, no one would miss it," said McCaskill.

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Some superintendents cautiously admit they believe mole crickets are more active

under a full moon. They're absolutely right, according to McCaskill.

"Mole crickets are nocturnal feeders," he said, "but they're attracted to light. The more natural light — as exists under a full moon — the more surface activity."

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