

Nematode test begins at Fla. courses

Florida researchers will begin releasing the most promising biological control agent available for mole crickets this month on 23 test golf courses throughout the state.

It is hoped the microscopic worms called nematodes will help eliminate the pesky insects which cause an estimated \$46 million damage annually to Florida courses, lawns, pastures and fields.

Among the courses participating in the nematode release program are Bay Hill, TPC in Jacksonville, Fiddlesticks in Fort Myers, Royal Poinciana in Naples, Interlachen Country Club in Orlando and Cypress Run Country Club in

Tarpon Springs.

"Mole crickets just ruin our putting, tees and fairways. Not only do they wear and tear at the grass roots, and prevent grass from growing, but their tunneling makes very, very bad spots on the fairways," said Robert J. Yount, vice president of development for the 800-member Florida Turfgrass Association.

The FTA, through its funding arm, The Florida Turfgrass Research Foundation, is funding research and the release of the Uruguayan nematode through a \$100,000 grant to the University of Florida's Institute of Food and Agricultural Sciences. Owners of

each of the participating golf courses will also provide \$8,000 to the foundation to help finance the release and further biological research.

Unlike other types of nematodes, the Uruguayan variety is not harmful to man, plants, animals or other insects. It preys solely on mole crickets.

The nematode enters the tiny, tan insect and releases a bacterium that kills the mole cricket. The nematodes feed on the bacteria, which multiply rapidly in the body of the mole cricket. The nematode undergoes two complete life cycles inside the cricket, with about 50,000 juvenile nematodes

leaving the cadaver to infect other mole crickets.

IFAS scientists J. Howard Frank and Grover Smart will release 3 million nematodes on the first course. They will use electronic sound emitters that mimic the mole cricket's mating call to lure them to the waiting nematodes. Frank said he will try three different methods of spreading the nematodes near the sound emitter to trap the mole crickets.

Many chemical pesticides to control the pest are still being evaluated by regulatory agencies and may not be available for some time, making a biological control agent all the more attractive. The Florida

NEWS

Turfgrass Research Foundation provided \$145,000 to the IFAS over the past five years to find a biological alternative.

The Uruguayan nematode has proven very effective. The release of nematodes at five sites in Gainesville pastures has decreased mole cricket populations by 95 percent.

Oklahoma remodeling courses

BY PETER BLAIS

Oklahoma is spiffing up its nine state-owned resort golf courses to cash in on the game's growing popularity.

"The people here (state tourism department) are aware of the growth in golf," said Art Proctor, the department's golf director since April. "They want to enhance our courses' image so we can attract more people."

That image was slightly tarnished by poor playing conditions at many courses. Proctor, who has played the PGA and Senior tours and served as head pro at Kickingbird GC in Edmond the past 16 years, often heard complaints about state courses from Kickingbird members. Improper fertilizing, over-watering, poorly cut greens, and too-frequent changing of cup placements were among the gripes.

"It was just a general lack of technical knowledge," said Proctor. "They created this position to take the courses out of the control of the parks and give it to experts."

A \$5-million bond issue, approved in November, includes \$800,000 for expanding three state courses from nine to 18 holes. Although it generally costs much more to build a single nine-hole course, the state can take advantage of such cost savings as inmate labor, use of state equipment, and in-house expertise to design and lay out the additions.

The three courses up for expansion are Quartz Mountain State Park near Altus, Lake Murray State Park near Ardmore and Hochatown State Park near Broken Bow. Three greens were rebuilt at Sequoyah with more expected to get similar treatment as funds become available.

Proctor also plans to install cart trails and buy new equipment at the remaining courses. Driving ranges are on tap for some facilities, with Lake Texoma State Park's expected to open this spring.

Rifitted pro shops, new signs, fresh paint, 1,400 newly planted trees and new benches have been spread out among the courses. Lessons will be made more available and PGA members only hired as new golf managers, a move Proctor expects will improve turf quality.

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Karsten reports analysis breakthrough

BY MARK LESLIE

Karsten Turf Co. has introduced an advanced technology that allows superintendents to quickly analyze the health of their turf at the source: the grass itself.

Karsten's research team has used near infrared (NIR) spectroscopy instrumentation to develop the Model 491 Scanner to analyze the nutrient content of grass tissue samples.

Research Manager Dr. David York said the scanner now analyzes 10 nutrient elements: nitrogen, phosphorous, potassium, calcium, magnesium, sulfur, iron, zinc, manganese and boron. The researchers are investigating the possibility of adding sodium, molybdenum, cobalt and silica to the scanner's capability.

The prevailing method of analysis is testing the soil. As successful as this has been, York said it does have drawbacks. He said that while a soil test finds what is in the soil, those nutrients don't necessarily get to the grass.

The pH and chemistry of soils and the soil texture — whether it is clay or sand — influence the availability of the essential nutrients to the grass.

"We think this is much more useful," York said, speaking of the \$14,000 scanner which is IBM computer-compatible. "We're very optimistic. The initial response is that this is something that will really help superintendents better manage their golf courses."

The procedure is simple and fast. The superintendent takes a small (50- to 100-gram) sample of grass, rinses it in water and dries it in a microwave oven. The dried sample is ground into a fine powder using a small cyclone grinding mill. The sample is placed in a small cup and inserted into the Model 491 Scanner. The preparation of the sample to this point takes about 15 to 20 minutes.

One minute after the sample is placed in the scanner, the computer it is connected to displays a complete nutrient profile.

"For the first time, this gives the superintendent a tool with which he can attempt to apply or meet the actual fertilization/nutrient requirements of his golf course," York said. "He can provide that grass with what it needs to keep it growing in a healthy, vigorous state."

"Until now he had to send a sample off to a lab and wait, perhaps for weeks. Now if he has had a serious problem with nutritional deficiency or excess he can find out quickly and get a jump on resolving it."

Citing Karsten's accompanying liquid nutrient products, York said: "We don't worry about soil pH because we have a lot of things in our nutrients that buffer the plant from pH. We are putting nutrients on the leaf so they react foliarly. We're attempting to bypass the problems that occur when granular fertilizer is applied to the soil and the problems of nutrient tie-up."

While many companies offer nutrients, Karsten's scanner is unique to the industry and to turfgrass analysis. The infrared tech-

Oklahoma

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Proctor estimates the state has saved 13 percent on new purchases since the courses started buying as a group.

Each course had its own way of tracking sales, golfers, free passes, number of members, gift certificates, etc. before this year. Proctor installed uniform cash registers and financial record-keeping at all nine courses shortly after assuming his new position.

"Now we can all pull together as one," he said.



Dr. David York with Model 491 Scanner

'The initial response is that this is something that will really help superintendents better manage their golf courses.'
— Dr. David York

nology has been used in the agriculture industry for 10 years, analyzing forage for protein, crude fiber, digestibility, et cetera.

York worked with project coordinator Bernie Atutis, Penn State Professor John Shenk of Shenk's Infrasoftware International, and Karsten's research staff on the scanner. He feels the equipment is a breakthrough for groundskeepers, providing them an ecologically and environmentally sound approach to maintaining healthy turf.



LPGA choosing course architect

The Ladies Professional Golf Association is reviewing applications for an architect to build the group's new, 36-hole home course in Daytona Beach, Fla. LPGA media services coordinator Beth McCombs said it wasn't known when a decision would be made among the 37 applicants. The course, scheduled to open in 1991, will host the annual LPGA qualifying tournament.

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