

RESEARCH

REPORT

It takes one to grow one

Producing Pasteuria by the pound to be a pesticide doesn't look too feasible yet

BY DARCY MEEKER

Soil samples from golf courses in Broward, Collier and Palm Beach counties turn up many pest nematodes with bacterial infections. That's the report from Robin Giblin-Davis, an IFAS researcher at the Fort Lauderdale Research and Education Center.

Giblin-Davis is studying the sting nematode.

With funding from the FTGA and the O.J. Noer Research Foundation, he's looking at *Pasteuria*, a bacteria which appears to be one nature's ways of keeping nematodes and other pests in line.

In the first six months in the laboratory, the bacteria built up to the levels researchers had seen in the soils. After one year, *Pasteuria* seemed to depress sting nematode populations, a revelation which will not depress golf course

superintendent populations at all.

Even though it takes a year for the microbe to slow the nematodes down, with a perennial system like grass that you expect to have in place for 15 to 20 years, one year isn't such a bad deal.

"It's encouraging," said Giblin-Davis. "There are no panaceas, of course. It's one of the many potential biological control candidates."

But producing *Pasteuria* by the pound to be a pesticide doesn't look too feasible yet.

So far, scientists haven't found a way to grow it except on the sting nematodes themselves. That means producing the microbe calls for scientists to produce sting nematodes.

As the IFAS researcher wryly puts it, "Sting nematodes are not easy to grow unless you're trying to grow grass."

There are some real advantages in the

Want to get involved?

How can you get involved in research? It's easy. Researchers are always looking for people in the field who are willing to cooperate with their projects. Call Bob Yount at the Florida Turfgrass Association in Orlando at 407-898-6721. Contact the University of Florida in Gainesville at 904-392-7231 and speak to Dr. Ed Freeman. In Fort Lauderdale, you should contact Dr. Monica Elliott at 305-475-8990.

Pasteuria approach, he added. *Pasteuria* is very persistent. Its spores are resistant to heat and to most of the pesticides available.

“Once you get them (*Pasteuria*) in your soil, they’re going to be around for a long time like little land mines that the nematodes can trip over. There’s evidence that use of some nematicides may actually encourage the microorganisms.”

Also in favor of the *Pasteuria* and other biological control approaches: some nematicides are fairly toxic. Some are losing their efficacy as soils built up populations of microbes that can digest the pesticides.

The Fort Lauderdale scientist said that it looks like almost all phytoparasitic nematodes have a type of *Pasteuria* afflicting them. He said USDA scientists and other IFAS researchers are studying the germ’s potential to control other pests. IFAS researcher Don Dickson in Gainesville studies *Pasteuria* with a smaller spore that infects sting nematodes and another *Pasteuria* that attacks lance nematode. He’s looking at a fungus on lance nematodes, also.

What can golf course superintendents do while science marches on its own sweet time? Giblin-Davis recommends you do the same thing that the researchers are doing: Take samples of soil in areas that used to have nematode problems and don’t seem to anymore. Then sprinkle the soil over problem areas and check back next year.

It’s a pretty small investment with a big potential payback.

St. Augustine shows some promise around banks, bunker faces

St. Augustine can add a new texture and color to South Florida roughs without taking over the fairways, says Steve Ehrbar, who tested the system with architect Pete Dye at Cypress Links GC in Jupiter. Now at Lost Tree in Palm Beach, Ehrbar had previously tested centipede, bahaia and carpet grass at Old Marsh in Palm Beach Gardens with “not very good luck.”

But the St. Augustine grass worked out really well around bunker faces and lake banks to give a contrast appearance, like golf courses up north. Against all that bermudagrass, the St. Augustine provided a different color and texture.

They feared the disadvantages. St. Augustine is very aggressive. Would they be able to keep it from creeping into fairways?

“Over a year’s time we found we could get the control we wanted. The St. Augustine did especially well on the steep, two-to-one slopes Dye likes to use. These are trouble spots requiring hand-mowing and it’s hard to get any fertilizer on them.”

They used a chinch bug-resistant cultivar of Floratam.

“You can only sod it,” said Ehrbar. “On a new golf course, it’s nice to sod. It healed in very quickly without too much washout problem, whereas when you sprig grass, you can find it washed away during rainy summer months.”

Phil Busey, IFAS researcher at Fort Lauderdale, is studying what makes St. Augustine grasses more or less susceptible to chinch bugs.

‘Good’ nematodes well established at seven golf courses

Year One of the FTGA-sponsored “good nematode” research project has come to a close with good news. The microscopic worms that burrow into mole crickets, eat their innards and reproduce have gained a foothold. Seven of the 21 Florida golf courses participating in the experiment have captured and returned mole crickets infected with the nematode to IFAS researchers, meaning that the nematode is living at large on those courses.

The parasitic nematodes attack southern, tawny and short-winged mole crickets which cause \$47 million worth of damage to Florida turfgrass annually. Some golf courses pay over \$20,000 a year to fight this browner of green space.

Says Howard Frank, the IFAS entomologist who coordinates UF mole cricket biocontrol work: “The methods used to release these agents were basically the same on all courses. There is reason for optimism that the agents will be detected on most courses during 1991.”

Courses where the parasitic nematodes are established are Cypress Creek, Orlando;



Your Sand Man

E. R. JAHNA IND., INC.
LAKE WALES, FLA 33859-0840
(813) 676-9431

Sand • Rock • Dolomite • Hi-Cal