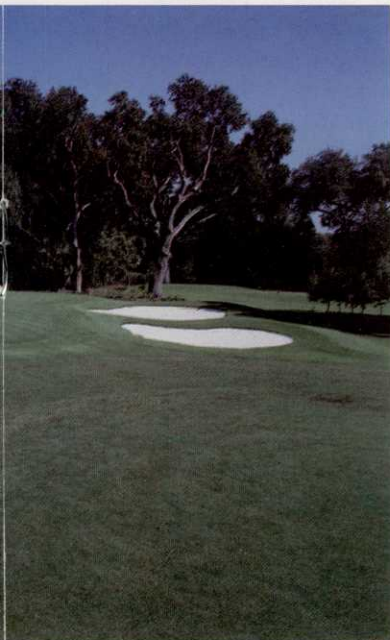




d after... two holes

ry Club of Orlando success-
photo of the first hole before
s and notes. Below is a photo
re the sketches, notes and
; above is the "after" photo.



EVERHART/PHOTOGRAPHICS

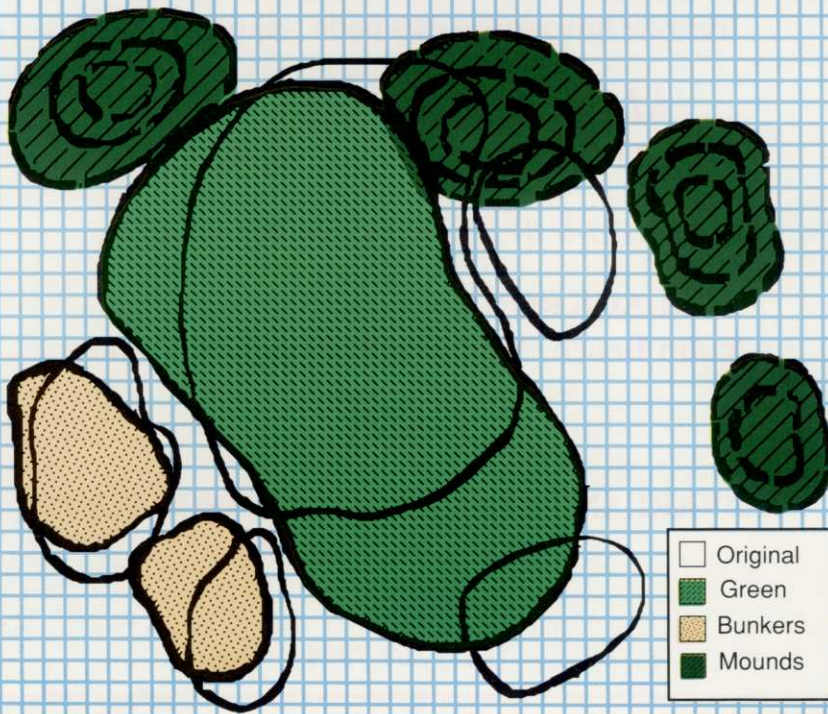


KIEFFER/JANLARK

No. 5 — No Ross character here any more

"The goal here is a completely redesigned green that reflects a couple of Ross characteristics. (See below.) First of all, the left rear portion of the green plays up on a mound and this characteristic, combined with an exaggerated back-to-front pitch on the first half of the green, seeks to improve the shot-holding characteristics of the new green when compared to the old. A Ross-style chipping area, replete with a small area on the right side of the green that directs balls to the close-cut chipping area, adds interest to the green. Bunkers left are re-cut more in a Ross style with the final touch being a Ross approach bunker set some 75 feet short of the green. This bunker is detailed to appear as though it immediately fronts the green and will result in quite a few approach shots falling short as players try to just clear this 'fronting bunker.'"

-Brian Silva



(from page 19)

and CCO head professional Billy Sellers traveled to Pinehurst to play No. 2.

"We learned a lot from that trip," reports Lewis. "One important thing that Billy and I agreed on was that we didn't want undulations as severe as they were at No. 2. A few of the slopes there are at seven percent; the highest

we wanted was four."

"None of this would have been possible without the complete support of the membership," says Scarborough. "They must be willing to make the sacrifice."

Sacrifice is required on two fronts: money and loss of the golf course during construction.

The cost of the renovation does not stop with construction. CCO reopened in September with 32 more bunkers than it had when it closed in April and their configuration makes power raking unfeasible.

"We added a walk mower and increased our maintenance staff by four," Lewis reports. "We probably could have maintained the course with the same number of people but we wanted to increase the level of maintenance to match the quality of construction."

As for closing the golf course, "We could have done it nine holes at a time, but that would have meant being torn up for the better part of two years," Scarborough says. "This way, we were in and out in five months."

Silva concurs. "You can do it nine holes at a time, but it's not like when one nine gets closed for aerification. It's not as easy as it sounds. You will have haul roads cutting across the nine that's open. You'll be able to play golf, but I don't know how much you'll enjoy it."

The project went so smoothly that Lewis had to think a moment before coming up with any lessons learned from it.

"I learned the value of as-builts," he said. "We found a lot of undocumented material underground — irrigation pipes and power cables in particular."

What advice would they give to other clubs contemplating a similar project?

"Plan," says Lewis. "Plan, plan, plan... and everybody must have the same goal. No hidden agendas, no personal monuments. Plan."

"Communicate with the people," says Silva. "Design and construction is easy; administration and communication are the real tasks. Leave those egos at the door."

"Get the commitment from the members to do it right, be prepared to spend enough money to do it right and get the architect, contractor and superintendent who know how to do it right," says Scarborough.

"We paid the price. And when we walked out on that golf course in September, it was worth it."

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Who's in charge of keeping these amazing ecosystems in harmony with nature? Today's golf course superintendents. They're part troubleshooter, part business manager, part scientist and all environmentalist — dedicated to making our world a greener place.



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Environmental topics top seminar list at GCSAA Conference

"Green Education" for golf course superintendents will be in the spotlight at the 62nd International Golf Course Conference and Trade Show scheduled Feb. 5-12, 1991, in Las Vegas.

Thousands of superintendents and other turfgrass professionals will attend more than 40 educational sessions at the conference, many of which will focus on sound environmental practices. The conference is hosted annually by the GCSAA.

New this year will be an in-depth Environmental Management Program developed by GCSAA that allows superintendents an opportunity to gain specialized instruction and earn "specialist" certificates in six environmental areas:

- Integrated Plant Management

- Underground Storage Tanks
- Employee Safety and Right-to-Know
- Water Quality and Application
- Golf Course Development
- Storage, Disposal and Recycling

In order to achieve specialist status, a superintendent must successfully complete as many as seven courses designed specifically for a particular area.

Because of the importance of groundwater protection and new EPA regulations, GCSAA is hosting a special UST symposium at 1 p.m. Feb. 11. A panel moderated by Donald E. Hearn, CGCS, a GCSAA past president, will discuss UST selection, installation, closure and monitoring, including legal requirements that affect about 85 percent of all golf facilities.

Bob Klitz, superintendent at Inverrary CC in Coral Springs, will represent golf course superintendents on the panel. Other members are Ed Kettenbrink, senior consultant at Advanced Environmental Specialists; Robert Yoos, environmental scientist at Franklin Associates; Lee Daniels,

EPA Region VII; and Richard Shanks, president of Jardine Insurance Brokers of Kansas City.

The International Golf Course Conference also includes a two-and-half-day trade show, a gala banquet featuring a performance by Neil Sedaka, the association's annual meeting and election of officers, and the 1991 GCSAA Golf Championship.

Conference week opens with the golf tournament Feb. 4-5 at five courses in Scottsdale, Ariz. Officially representing Florida in the team competition will be Mark Henderson, Fred Klauk, Dave Oliver and Dale Reash. A total field of about 600 is expected to compete for the chapter and individual championships.

Mark H. McCormack, sports marketing entrepreneur, will keynote the opening session Feb. 8 at The Riviera, the GCSAA Conference and Show headquarters hotel. McCormack is the founder and chairman of International Management Group, a 14-company, multinational conglomerate. He also wrote the book, *What They Don't Teach*



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More than 500 manufacturers and distributors of golf/turf industry products, supplies and services are expected to exhibit at the trade show, which runs Feb. 10-12 at the Las Vegas Convention Center.

The largest annual event in the industry, the GCSAA Trade Show affords golf course superintendents the unique advantage of being able to compare all the different product lines in one place at one time.

The highlight of the gala evening will be the presentation of the Old Tom Morris Award, the GCSAA's highest honor, to William C. Campbell, the only American ever to have served both as president of the United States Golf Association and as captain of the Royal & Ancient Golf Club of St. Andrews, Scotland.

"No one has given more to the game of golf than Mr. Campbell," said GCSAA President Gerald Faubel. "He has dedicated his life to promoting the game and has demonstrated many times his support for the golf course superintendent. GCSAA is honored to present this award to Mr. Campbell."

Campbell worked to tighten the bonds between the USGA and GCSAA. During his presidency, the USGA launched major fund-raising campaigns to finance the development of Golf House and the establishment of test facilities for clubs and balls, as well as a long-term program for turfgrass research, notably in the area of drought-tolerant grasses.

The award was established in 1982 to recognize individuals who have made outstanding lifetime contributions to the game. It honors Old Tom Morris, 19th century greenkeeper and golf professional at the R&A, clubmaker, ballmaker, four-time British Open champion and golf course architect.

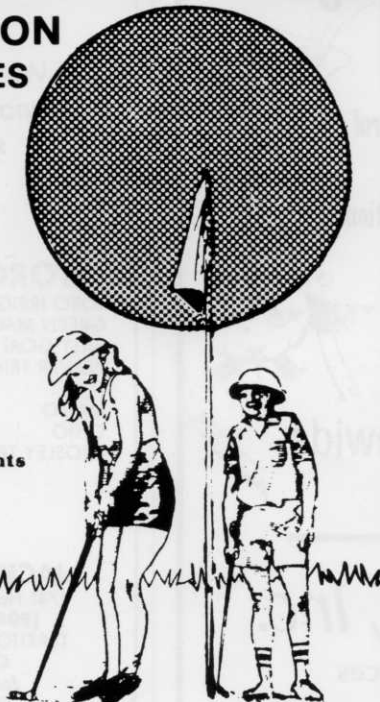
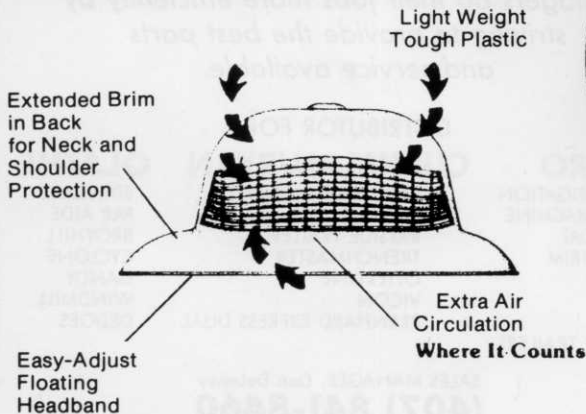
Last year's conference and show, hosted by the FGCSA in Orlando, drew more than 17,300, including nearly 1,600 from 39 foreign countries.

Leaders of golf course superintendents' and greenkeepers' associations in 18 countries have been invited to meet with GCSAA leaders in the second annual International Golf/Turfgrass Round Table.



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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;



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Northdale, Tampa; Pineview, Macclenny; Riviera and Royal Poinciana, Naples; Sun City South; and TPC/Sawgrass, Ponte Vedra Beach.

Other courses participating in the project are Banyan, West Palm Beach; Bay Hill, Orlando; Citrus Hills, Hernando; Countryside, Clearwater; Cypress Run, Tarpon Springs; Delaire, Delray Beach; Fiddlesticks, Fort Myers; Foxfire, Sarasota; Golden Hills, Ocala; Interlachen, Winter Park; Quail Ridge, Spring Hill; Riviera, Ormond Beach; Waterford, Venice; and Woodfield, Boca Raton.

Red-eyed flies doing their part in war against mole crickets

Steve Kuhn, superintendent at Doral CC in Dade County, ran sound traps in December to see if there were any red-eyed flies around and caught 22, a record number.

This natural enemy of the mole cricket, imported from Brazil, comes to the mole cricket mating call and lays its living larvae on or near the singer.

The fly has been released at the 21 courses participating in the nematode experiment. No one has looked directly for red-eyed flies in these locations, but a mole cricket sent to Howard Frank from Foxfire in December was infected with a fly larvae. Definitely a good sign.

Frank's research team will monitor for the fly at the 21 courses next fall when

populations will have had a chance to build up.

Meanwhile, there is a move afoot to enlist more courses in the project.

Pine tree decline treatment project extended two years

The Florida Turfgrass Association has agreed to fund Dr. Roger Webb's pine tree decline research in 1991 and 1992.

Webb, a University of Florida scientist, has prepared a research protocol for this expanded program which includes 14 treatment and control categories. He needs data from at least 100 different treatment sites around the state.

Any Florida golf course wanting to participate in the program should select at least 140 trees to be injected (10 trees for each of the treatment and control categories). More trees can be treated at each site in multiples of 140.

Variables include injection methods, rates, product packaging, product formulations and fungicide chemistry.

Each participating site must contribute \$5,000 to the Florida Turfgrass Research Foundation Pine Tree Research Program. The money pays for training seminars and materials, the treatment products and expenses. Cost for each additional 140 trees is \$3,080 or \$22.50 per tree.

Participation (sign-up) information will be mailed from the FTGA office to all inter-

ested superintendents in the next few days. Seminars will begin in January and February with tree injections beginning in the spring of 1991.

All contributions to the Florida Turfgrass Research Foundation, a 501-C-3 organization, are tax deductible. For more information, contact Bob Yount at the FTGA office, 407-898-6721.

Cisar/Snyder study aimed at protection of groundwater

The first major research to be conducted at the FGCSA Research Green at the University of Florida's Fort Lauderdale Research and Education Center will be a three-year study of mobility and persistence of turfgrass pesticides by Drs. John Cisar and George Snyder. Below is a summary of the proposal which landed a \$135,000 grant from the USGA (see page 8):

Rationale

Many different pesticides are required for maintaining high quality turfgrass in golf course greens.

The sand-based USGA green specifications are being used increasingly because they perform well under heavy traffic in unfavorable weather conditions. The USGA green drains well, while at the same time it provides an acceptable measure of water-holding capacity and a favorable root zone environment.

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But the green does not contain a high level of organic matter and, in a humid climate, considerable percolation can occur.

These two factors may lead to unacceptable mobility of pesticides used for turfgrass maintenance, which may impact ground-water quality.

We are requesting funds to evaluate the mobility and persistence of selected turfgrass pesticides in a USGA green in a humid, sub-tropical environment, and to devise strategies for minimizing ground-water contamination.

We also intend to determine the efficacy of certain soil amendments for absorbing pesticides and the suitability of the amendments for use in a green.

Specific Objectives

Determine the persistence of turfgrass pesticides in a USGA green, evaluate pesticide mobility through the soil profile, measure pesticide concentration in percolate

waters, and evaluate existing computer models for describing the persistence and mobility of pesticides under field conditions. Investigate selected soil amendments for mitigating pesticide mobility.

Methodology

Lysimeters for collecting percolate waters will be installed in an existing USGA green at the Fort Lauderdale Research and Education Center. Selected pesticides (e.g. organophosphates, carbamates, phenoxy compounds) will be applied to the green, including the lysimeter area.

Cultural practices and environmental conditions following pesticide application will be recorded.

Analyses of turfgrass thatch, soil, and percolate waters for the applied pesticide, and in some cases for important degradation products, will be made at various time intervals to determine the mobility, persistence, and degradation of the pesticides.

Existing computer models will be evalu-

ated to determine the degree to which they describe observed phenomena in a USGA green.

In laboratory column studies, soil amendments will be evaluated for reducing pesticide mobility. Promising amendments will be field tested to evaluate their compatibility with turfgrass maintenance.

Don't under-water rye during transition to bermuda

Greens and fairways overseeded with rye for the winter should not be underwatered in transition back to bermudagrass, says Dr. James Beard of Texas A&M University at College Station. Withholding water can enhance death of bermudagrass, especially if spring root decline occurs. Instead, before the soil reaches 64 degrees F 4 inches down, he recommends close mowing, high nitrogen and weekly verticutting. These practices allow the sun to reach the bermudagrass and gets it greened up. ↘



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