



# The Florida Green

January/February 1991

Country Club of Orlando  
Number 15



## Meeting the nutrient needs of turf and ornamentals.

LESCO has a fertilizer to meet your regional and cultural requirements, whether your turfgrass responsibilities include maintaining a golf course, athletic fields or residential/commercial landscapes.

LESCO fertilizers feature sulfur-coated urea as a nitrogen source because years of research and performance have proven it to be the most efficient and economical form of controlled-release nitrogen.

We also offer sulfur-coated diammonium phosphate as a phosphorus source and sulfur-coated



The LESCO facility in Martins Ferry, Ohio is the largest sulfur-coating plant in the world.



sulfate of potash as a source for potassium to increase efficiency and safety of these nutrient sources.

Leading the industry in sulfur-coating technology and production.

LESCO was the first commercial producer of sulfur-coated urea in the United States and to this day is one of only a few producers in the world.

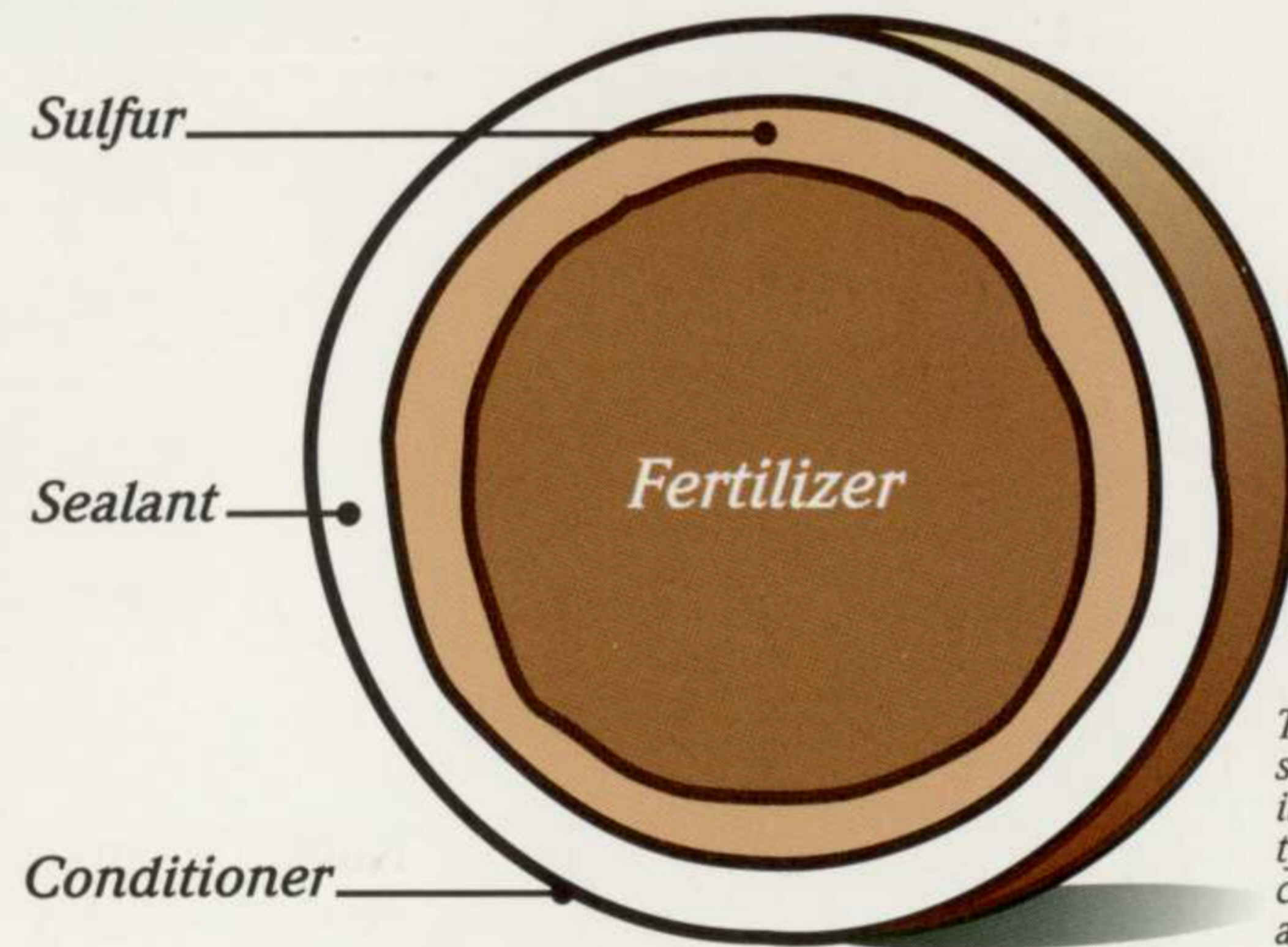
Today we produce sulfur-coated fertilizers at our state-of-the-art facility in Martins

Ferry, Ohio. The plant is fully automated for greater efficiencies in manufacturing and for a consistently uniform,

quality product. This enables us to offer our fertilizers at competitive prices.

The LESCO facility at Martins Ferry is the largest sulfur-coating plant in the world. Its products are shipped to fertilizer users worldwide.

The sulfur-coating technology was developed as a means of slowly releasing plant nutrients from water soluble sources over an extended period of time. The coating process involves spraying fertilizer particles with molten sulfur and then applying a



This cross section illustrates the typical composition of a sulfur-coated fertilizer granule.

coat of sealant. As the particles are cooled, a conditioning agent is added to keep the particles free flowing. The last step is a screening process that ensures uniform particle size.

The slow-release characteristic of a sulfur-coated fertilizer is determined by the thickness of the coating. Nutrients are released from sulfur-coated fertilizer by diffusion through pores in the coating and by natural breakdown of the coating.



## Offering the most sulfur-coated fertilizer options in the industry.

By sulfur-coating different sized particles, LESCO has developed three distinct granular fertilizer product lines: Elite, Mini and Standard in a variety of analyses. Whether the turfgrass is a low-cut golf course putting green or a high-cut utility area, LESCO has a fertilizer that's right for the job.

LESCO formulates products for regional and seasonal needs and recommends fertilizers based on agronomic and cultural requirements.

### LESCO Landscape & Ornamental Fertilizers.

LESCO Landscape & Ornamental Fertilizers are designed with a thicker sulfur coating for a much longer feeding duration than turf fertilizers. They feature 100 percent sulfur-coated nitrogen, phosphorus and potassium to provide superior nutrient availability and safety during all stages of ornamental plant production and maintenance. The steady, gradual nutrient release insures efficient uptake by plant roots.

### LESCO Custom-Blended Fertilizers

If our wide selection of standard fertilizers doesn't meet your needs, LESCO can custom-blend a fertilizer to meet your specifications.

We can design fertilizers in a wide range of high analyses and high performance blends. Nutrient sources and release rates can be custom selected. Micronutrient packages can also be custom designed.

LESCO can also custom formulate and package private label fertilizer blends.

### Delivering the benefits of sulfur-coated fertilizer.

Sulfur-coated fertilizers have several advantages over conventional water-soluble fertilizers. They offer slower and more controlled release of nutrients over a longer period of time for a more uniform growth response and a lower burn potential. There is also significantly reduced risk of volatilization, run-off or leaching from the root zone.

This slow-release feature enables you to make fewer applications at a higher rate, saving time and labor. Also, a more consistent growth rate reduces mowing requirements and the need to collect unsightly clippings.

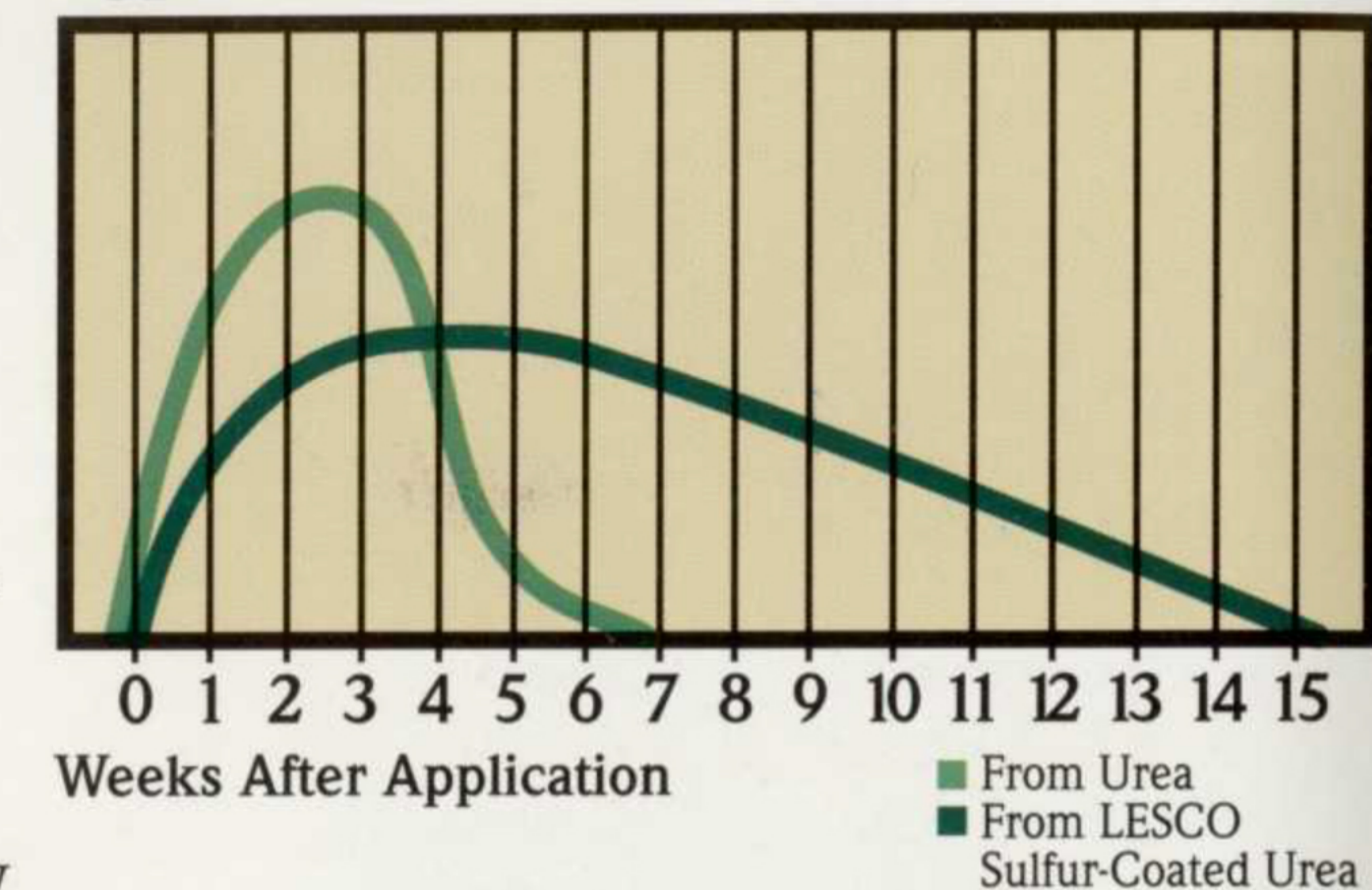
LESCO sulfur-coated fertilizers are produced in a uniform particle size that minimizes segregation in blends.

Sulfur-coated fertilizers also offer benefits over other slow-

release nutrient sources. For example, there is no significant delay in nutrient release following application so you begin to see results more quickly.

Nutrient release from sulfur-coated fertilizers is not adversely affected by excessive rainfall, irrigation or soil pH. It is also not dependent upon warm soil temperatures or bacterial activity.

### Typical Growth Response



### Buying results: fertilizers that work.

You can count on LESCO sulfur-coated fertilizers to perform. And you can count on the experts at LESCO to help you with all of your turfgrass challenges. Our team of fertilizer and seed specialists, golf course specialists and lawn care specialists are accessible and ready to help.

You can also be sure of the availability of LESCO fertilizers. Our products are warehoused in over fifty locations across the U.S. to serve your needs.

Contact your LESCO sales representative or call toll free (800) 321-5325 for more information on fertilizers or any other LESCO product.





*Elite Turf Fertilizers  
(with micronutrients)*



*Mini Turf Fertilizers*



*Standard Turf Fertilizers*

LESCO fertilizer granules are formulated with a variety of phosphorus and potassium sources and are also available with iron, manganese and other micronutrients.

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This is the smallest particle size available and is designed for the most demanding turf management programs with turf cut below one-half inch. LESCO Elite Fertilizers provide 11 times as many particles per given area as the standard LESCO products.

The Elite Fertilizers are especially well-suited for use on golf course greens and tees or fairways cut with light-weight mowers. Particle size and density virtually eliminate mower pickup.

#### **LESCO Mini Turf Fertilizers**

The Mini Turf Fertilizers are designed for more demanding turf management programs with turf cut above one-half inch. They provide three times as many particles per given area as the Standard LESCO products.

#### **LESCO Standard Turf Fertilizers**

Designed for most turf management programs with turf cut above one inch, LESCO Standard Turf Fertilizers are produced in a wide array of analyses.

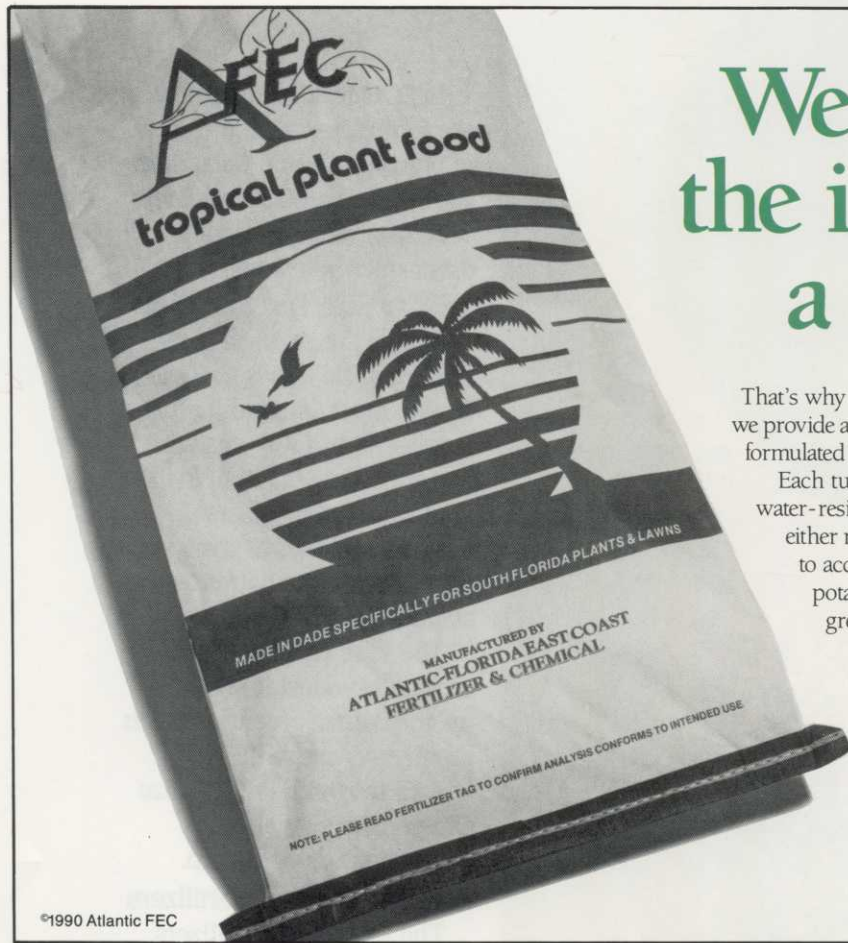
For more information contact your LESCO Sales Representative or call toll free **(800) 321-5325**. In Cleveland, call (216) 333-9250.

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# The Florida Green

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## Welcome!

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## Coming in future issues

### COVER STORIES

Hammock Dunes at Palm Coast and Weston Hills in Fort Lauderdale are scheduled for the first half of 1991.

### FGCSA SPOTLIGHT

Complete coverage of the 62nd International Golf Course Conference and Show in Las Vegas, the annual Poa Annua and Crowfoot classics, and profiles of the winners of the 1990 Distinguished Service and President's awards.

### ALSO...

How do you justify, hire and train an administrative assistant?... Spend a day with a USGA Green Section agronomist on a TAS visit... Look at the cooperative program between the USGA and the New York Audubon Society... Read about the annual USGA Green Section conferences in March.





**Adam Walsh  
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Waste Management of Palm Beach





Ray Hansen

# Administrative assistant can save a lot of money

*In an era when we are paying our assistants \$20,000-plus and mechanics \$12 per hour or more, they should be allowed to do what they do best.*

**S**hould you have an administrative assistant? As I call fellow golf course superintendents around the state, I am amazed at how many mechanics answer the telephone. Before I hired an administrative assistant at Delaire CC, my mechanic was supposed to answer the phone when no one else was in the shop. Each time this happened, he was away from his mechanic duties from 5 to 15 minutes.

In an era when we are paying our assistants \$20,000-plus and mechanics \$12 per hour or more, think of how much of their time is spent doing tasks that could be accomplished by an administrative assistant for much less money. Consider all the necessary reports to be filled out and records kept: equipment service reports, employment

service reports, OSHA reports, inventory of chemicals, to name a few; remember the time spent dealing with the uniform supplier each week, calling for prices of supplies, plus the ordering and receiving. This all takes time and is usually accomplished by some highly paid employee. An administrative assistant can do this and much more for a lot less money. Even if this person only works part time, you would be surprised at how much he or she can save your operation and allow the mechanic and assistant to do what each knows best.

I know some will say, "I have an answering machine." Answering machines are great when no one is in but when you are running a business, a phone call should be received. It could be an emergency.



# TURF NEWS

## ROUNDUP

### USGA grants \$151,000 for research at FGCSA green at Fort Lauderdale

If you build it, they will come.

The USGA Research Committee last month legitimized the two-year effort of the FGCSA to build a research green at the University of Florida's Fort Lauderdale Research and Education Center by awarding two research grants worth \$151,000 for work at the facility.

Drs. John Cisar and George Snyder will get \$135,000 for a three-year study of mobility and persistence of pesticide and Dr. Monica Elliott received \$16,000 to study the organism that causes bermudagrass decline.

The projects were two of 18 approved by the USGA panel for its special \$2.8 million environmental research program. The committee considered 25 pro-

posals in the final screening at Innisbrook Resort in Tarpon Springs early in December.

The committee also approved another \$758,000 in grants under the USGA's regular research program. No Florida projects were under consideration for regular funding.

"The fact that a USGA-spec green was available for pure research played a role in the committee's decision," said John Foy, Green Section Regional Director for Florida. "So did the fact that Florida has more golf courses than any other state.

"But basically, they were just solid research proposals that met the criteria for the special environmental research program."

The USGA had solicited project proposals in three areas: golf course benefits, alternative pest management, and pesticide and nutrient fate. The Cisar/Snyder and Elliott proposals were the only Florida projects to make the list of 25 finalists.

The largest grants of \$500,000 each went to two joint ventures, each involving three universities.

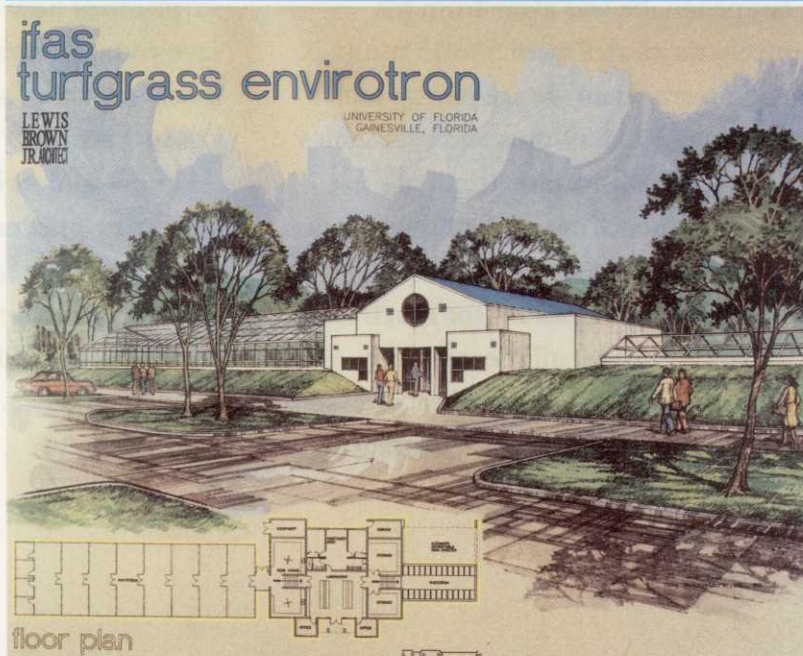
Penn State, Cornell University and the University

#### CORRECTIONS

*Zaun Equipment, Inc., was omitted from the list of Diamond Sponsors of the Crowfoot Classic on Page 5 in the Fall 1990 issue.*

*The FGCSA's half-acre research green at the Fort Lauderdale Research and Education Center cost \$80,000. A zero was omitted from the value in the President's Message in the Fall 1990 issue.*

*The Florida Green regrets both typographical errors.*



### Legislature shortens Envirotron campaign

*When the Florida Legislature moved up the starting date of its annual session from April to March, "They cut 30 days off my fund-raising campaign for the Envirotron," said Bob Yount, executive director of the Florida Turfgrass Association. The FTGA must raise its half of the \$700,000 before the Legislature meets.*



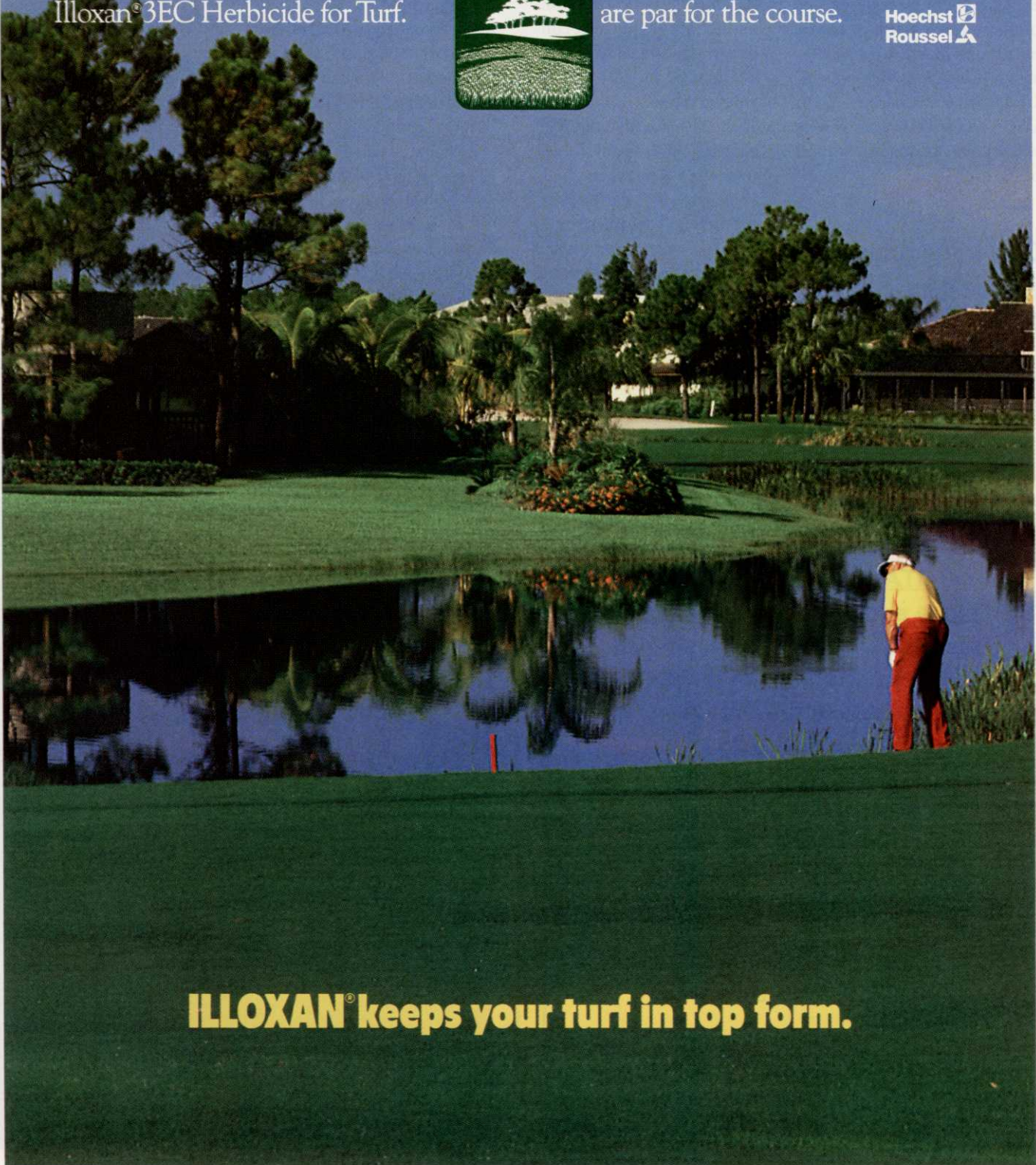
# Keep crowfootgrass out of the game!

This season there is a solution to a problem that has cropped up on a lot of golf courses—crowfootgrass. Now you can beat crowfootgrass (silver crabgrass or goosegrass) postemergence with Illoxan® 3EC Herbicide for Turf.

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of Massachusetts will share one grant while the University of Nebraska, Iowa State and Kansas State will share the other. Both projects involve the fate of pesticides and fertilizers.

Some of the money awarded to the Fort Lauderdale researchers will help pay for maintenance of the research green. Approximately one-fourth of the 20,000-square-foot green was built to USGA specifications. Both USGA-funded research projects will be performed on that portion of the green.

### Golf trade group still seeking funds for lobby effort

Why are the Florida Golf Council and better schools dis-

treasingly alike?

Everyone agrees both are needed but not enough people seem willing to pay for them.

"Florida Golf Day," proclaimed for Nov. 17 by then-Gov. Bob Martinez, netted only \$6,000 in seed money for the organization. The minimum goal, thought to be conservative, was \$25,000.

The need for such a trade group is apparent to those who attended a hastily convened but remarkably successful golf summit in November.

All agree that the trade organization should work with legislative representatives and regulatory staff to present the golf industry's views on proposed regulations.

Florida's citrus industry, with \$862 million in receipts,

certainly has its collective voice heard in Tallahassee.

Golf, with direct annual spending of \$1.6 billion and an economic ripple effect of \$5.2 billion, so far has been silent.

Nancy Oliver, interim executive director of the council, is trying to end this silence. To reach those who will form the broad base of support, she and members of the council's board and steering committee are hitting the road.

Regional meetings began in November in Tallahassee and were held throughout December in Jacksonville, Orlando, Tampa, Sarasota, Sebring, Fort Myers, Naples and Miami.

The meetings were to inform the public and members of the golf industry about the council's potential impact.

The response has counteracted Oliver's disappointment with the Golf-Day fundraiser.

"After the first two meetings, we had people telling us the organization that is needed," Oliver says. "They are also willing to support us financially, and that's very encouraging. I'm confident the Florida Golf Council can be a success."

Money, obviously, is a key factor in the council's eventual success, but a clear focus is also important.

Ron Safford, director of sports development for the state's Department of Commerce, says the council should go beyond gathering and providing information. Part of the problem is public relations.

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getting ripped in the press," Safford says. "We need to let people know the industry isn't anti-environment but that those in the golf industry are as concerned about the environment as the public is."

"We as golf course superintendents have been trying to articulate this problem and address it for a decade," says Tim Hiers, golf course manager at John's Island Club in Vero Beach. "We felt that we had the truth about the environmental impact of golf courses. However, the truth isn't going to win if the people don't know about it. And no one has taken the time to disseminate this information. As a result, the negative information gets the publicity. And this has cost us dearly already."

Golf course designer Tom

Fazio says that on one Florida project, the regulations were changed three separate times. It not only took time to conform to the new regulations, but Fazio says it also cost an additional \$150,000.

David Smith, president of Lake Poinsett Development Co., has been involved in the permitting process for nearly five years. His proposed 800-acre residential and golf development on Lake Poinsett and the St. John's River has received the necessary permits from the St. John's Water Management District. But now an environmental group has challenged the permits, and Smith is, at presstime, going into a hearing brought on by this challenge.

Oliver admits that the council is not a panacea. But by pooling its resources, she says,

the industry will have its interests represented with the legislators and the regulators.

Fazio feels that the council should take a page from the environmentalists' success. "If they are going to make the grade, they must have specific agendas and issues they will go after that will build the council into an organization that has clout.

"This is what the environmentalists have done."

### **USGA to hold two Green Section conferences in Fla.**

The USGA Green Section will conduct two Green Section Educational Conferences in Florida this year. The addition

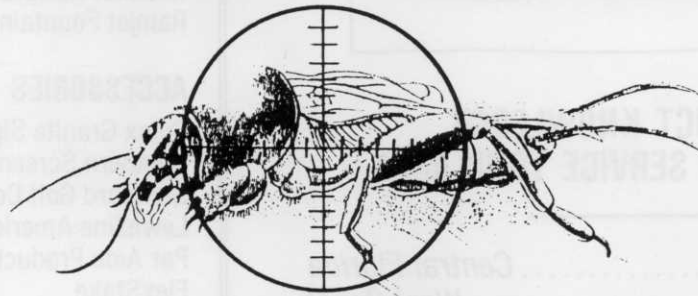
of a second conference was prompted by the growth of USGA Turfgrass Advisory Service subscribers in Central and North Florida.

The first conference will be March 12 at The Royce Hotel (Airport) in West Palm Beach. The second will be two days later at Orange Lake CC in Kissimmee. Both will run from 8 a.m. to 4:30 p.m.

Featured speakers will be the same at both conferences:

- Ron Dodson, president, The Audubon Society of New York State, Inc., who will discuss the new USGA-Audubon "Cooperative Sanctuary Systems" program.
- Dr. Bert McCarty, Environmental Horticulture Department, University of Florida, will speak on Inte-

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grated Plant Management.

- Jim Moore, Director, Mid-Continent Region, USGA, will speak on Computers in Golf Course Management.
- Brian Silva, golf course architect, will speak on the history of golf course design. Other topics will include:
- The future of golf course irrigation in Florida
- Fuel and pesticide storage
- The construction and management of USGA spec greens in Florida

CEUs will be given for members of the GCSAA, CMA and PGA. Club officials, managers and golf professionals will benefit from the program, according to the USGA.

Seating at both sessions will be limited. Preference will be given to those who pre-register

by calling Shelly Foy at the USGA Green Section Regional Office in Hobe Sound, at 407-546-2620 or by faxing the names and addresses of those attending to 407-546-GOLF.

Brochures for the Green Section Conference will be mailed in early February.

### **NGF honors six Fla. public courses**

Six Florida golf courses are among 50 across the nation to be honored by the National Golf Foundation for special achievement in public golf. Although the awards recognize efforts in promoting public play, the recipients were quick to credit the role played by su-

perintendents in their efforts.

"The bottom line is, you have to have a course that golfers want to play," said Jerry Comeau, general manager of the St. Clair Shores (Mich.) Golf Club, cited by the NGF as its showcase winner for the variety of programs it offers.

"No matter what you do to get people on your course the first time, you won't get them back unless the superintendent is doing an outstanding job."

Florida courses honored were Melbourne Beach Municipal; Marriott's Orlando World (Layton Overstreet, superintendent); Metro West CC (Steve Sorrell, superintendent), Orlando; Mangrove Bay GC (Marshal Edgren, CGCS, superintendent), St. Petersburg; Twin Brooks GC, St. Peters-

burg; Sandridge GC, Vero Beach.

### **Lake City CC seeking OJT sites**

Students in golf course operations, landscape technology, and turf equipment management at Lake City Community College will be seeking internship sites for summer 1991. The three-month practical field training (May through July) is a mandatory part of the LCCC curriculum.

Firms interested in participating should contact John R. Piersol, chairman; Golf Course Operations/Landscape Technology; Lake City Community College; Rt. 3, Box 7; Lake City, FL 32055; phone 904-752-1822, ext. 225.



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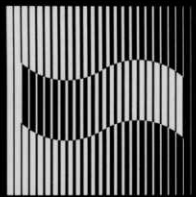
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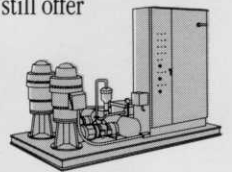
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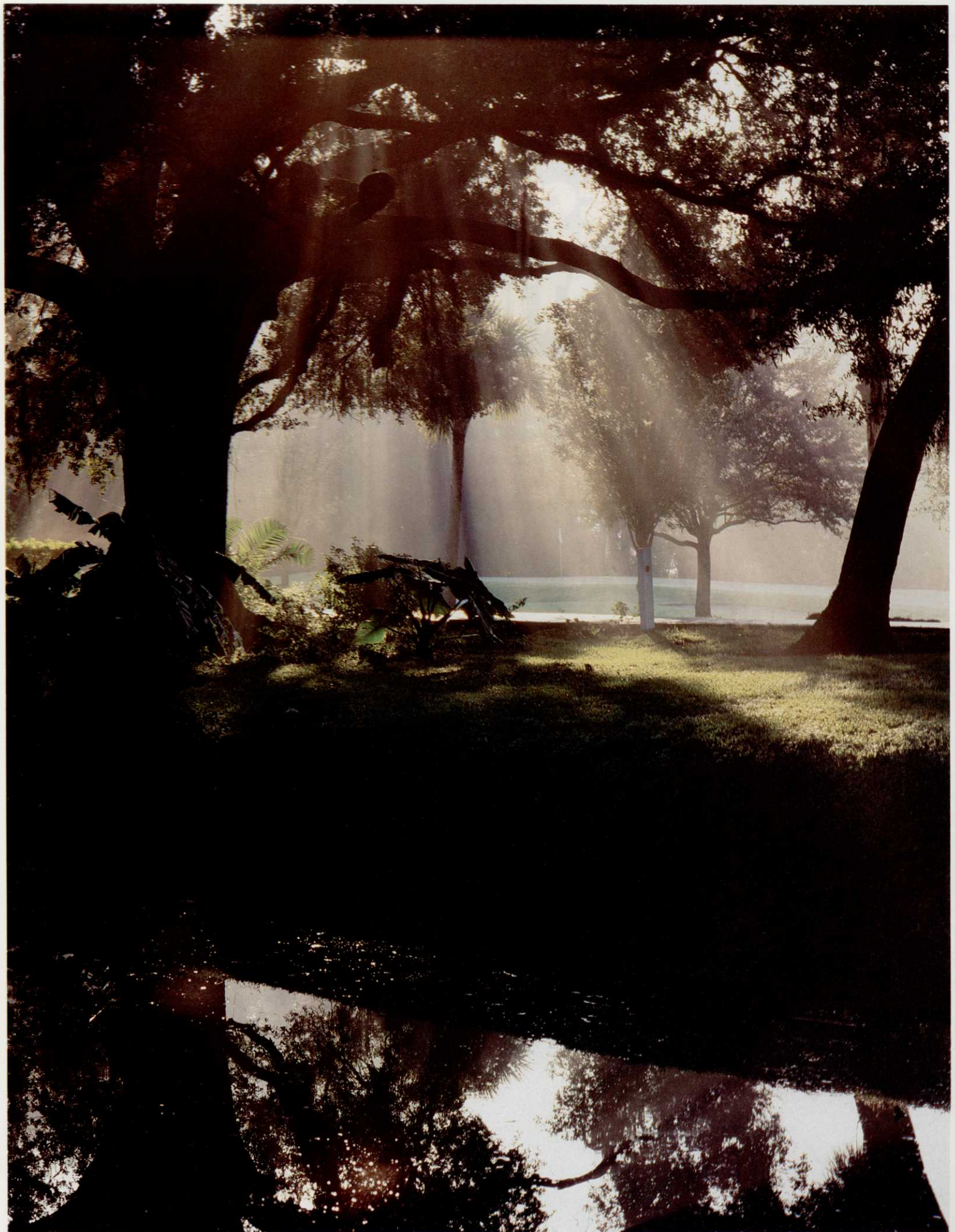


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*The 700 members of the Country Club of Orlando gave their golf course a 72nd birthday present: 18 rebuilt greens and 32 new bunkers.*



EVERHART/PHOTOGRAPHICS

# Grand old lady gets a facelift

BY LARRY KIEFFER

**A**t the Country Club of Orlando, the pride is back.

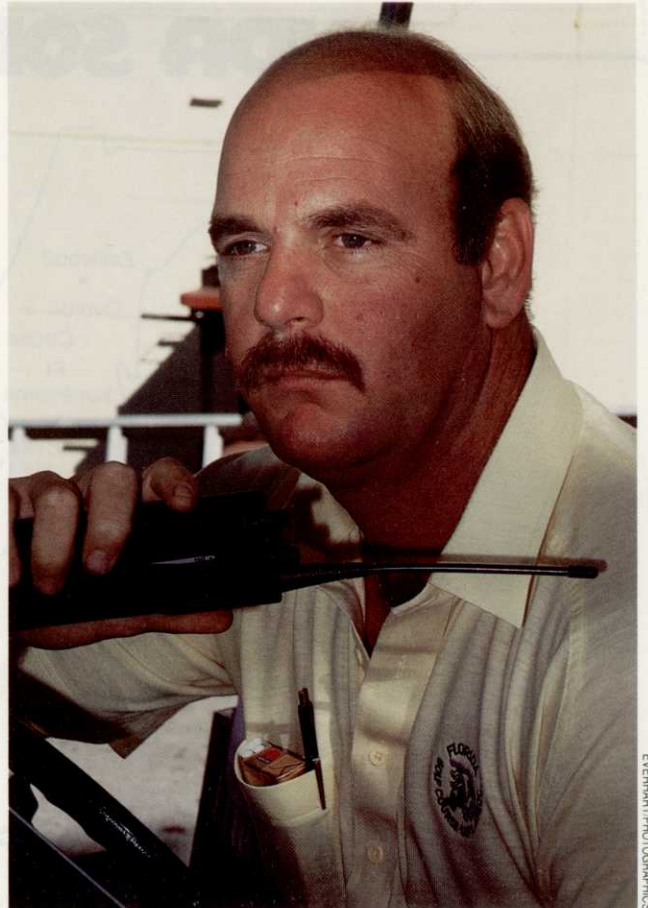
"We paid the price," says Tom Scarborough, chairman of the CCO greens committee. "And every time we walk out onto the golf course, we get our reward."

The price paid by CCO members was \$800,000 and loss of their golf course for five months.

The reward is a decidedly Donald Ross-flavored golf course with 18 completely rebuilt greens that will hold up to summer rains and heavy traffic.

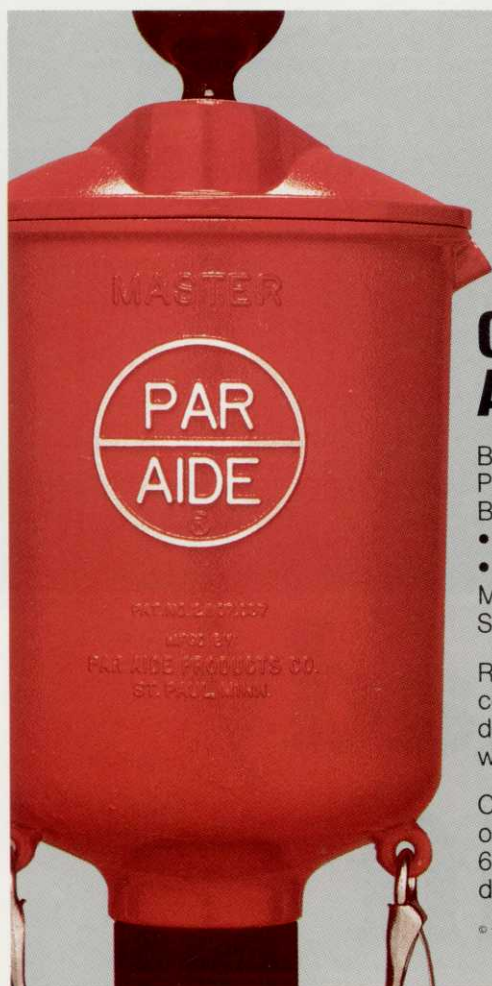
"It was definitely worth it," says Scarborough. "I love playing Pinehurst No. 2 and Seminole, and now I can truthfully say I love playing my home club."

*Above, the first hole sports five new bunkers and a chipping area. Bunkers at CCO will be hand-raked from now on, according to Superintendent Cary Lewis, CGCS, right, who helped sell the members on the renovation project. Mature oaks around 12th hole, left, show the dignity with which CCO wears her age.*



EVERHART/PHOTOGRAPHICS





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For the uninitiated, the No. 2 course at Pinehurst, N.C., is universally acclaimed as the best course by Donald Ross, the architect whose prolific work between 1912 and 1947 still influences American golf course design. Seminole GC in North Palm Beach is another outstanding Ross course.

As reported in the Spring 1990 issue of *The Florida Green*, CCO is credited to Ross although there is no proof that the architect himself ever visited the site when the course was built in 1918. It has enough Ross characteristics, however, that most experts count it among the more than 200 courses built by one of Ross's construction superintendents.

CCO's small greens, built mostly on muck with World War I-era techniques, could not withstand the heavy traffic of the club's 700 golf members. Scars from three major surgeries on the greens, all done with limited budgets, destroyed much of the Ross character.

When it came time for surgery number four, the CCO members decided to follow the advice of superintendent Cary Lewis and architect Brian Silva: Completely rebuild the greens, this time to USGA specifications and rework the surrounds to inject some Ross flavor.

In particular, Silva wanted to put Ross-style chipping areas next to several greens.

Everyone was excited and optimistic as the project was described in that issue last year. How did it turn out?

"The chipping areas came out better than my wildest dreams," Silva said. "Keep in mind that we were not following any kind of a Donald Ross plan. We were just trying to inject the essence of the Ross flavor."

"Fantastic," reports Lewis. "We finished on time, on budget and I have not heard a single complaint from the members."

"I haven't heard a complaint either," says greens chairman Scarborough, "not one complaint since we re-opened the golf course Sept. 28."

"A greens chairman at a club with 700 active golfing members who hasn't heard a single complaint in three

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months? That's unheard of!" says Silva. "But then so is just about everything else with this project.

"I have never before been involved in a project of this magnitude with so many people where everybody left his ego at the door. That's really what made it work.

"These were all reasonable, rational, down-to-earth people. From the general manager to the committee members to the superintendent to the contractor to the members, I have never seen such a diverse group so single-minded of purpose.

"It was the greatest work experience I have ever had.

In separate interviews, all three principals agreed that planning and commitment to excellence were the keys to success.

"You must give yourself adequate time to analyze the program and plan the project," says Lewis, who put in 18 months of preparation before construction began. "Take a hard look at your golf course with the idea that you are going to have a once-in-a-lifetime opportunity to solve some problems.

"Think about where materials are going to be staged, and how the tight areas of your golf course are going to be accessed. The core of a green is 400 tons of material. Moving it can damage the soil, bridges, paths, and so on. And you've got to do it 18 times.

"Make sure you can put the puzzle back together again."

"You must have the right people," says Scarborough. "Even if it's a turn-key operation, the superintendent must have construction experience. And you must have the right contractor. We did not put the job out for bids and I think that's why it was successful."

Silva stresses the single-mindedness of purpose.

"Because we wanted to inject a Donald Ross character at CCO, we all had to be of one mind what Ross character was and what we could do about it," he said.

To that end, Silva, Lewis, contractor Jeff Harstine of Central Florida Turf,

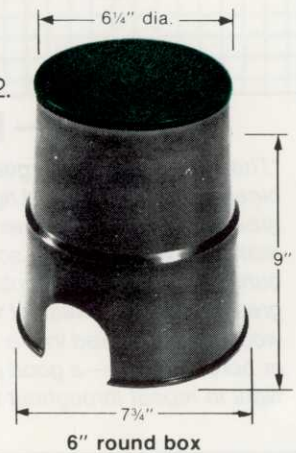
*(continues on page 22)*

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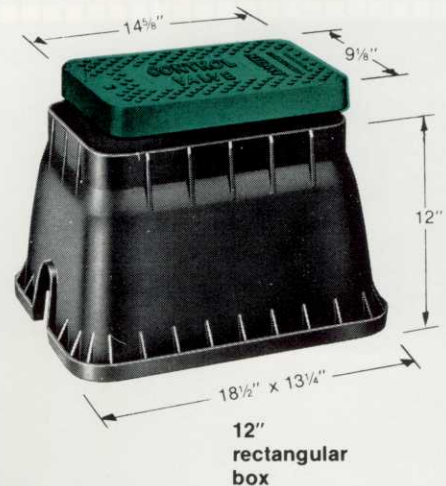
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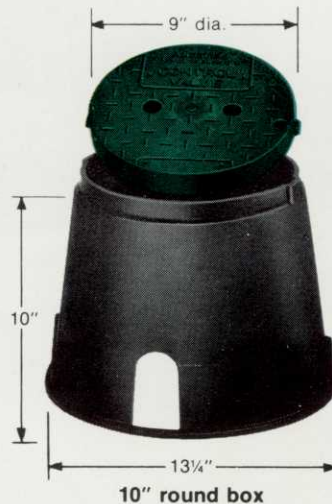
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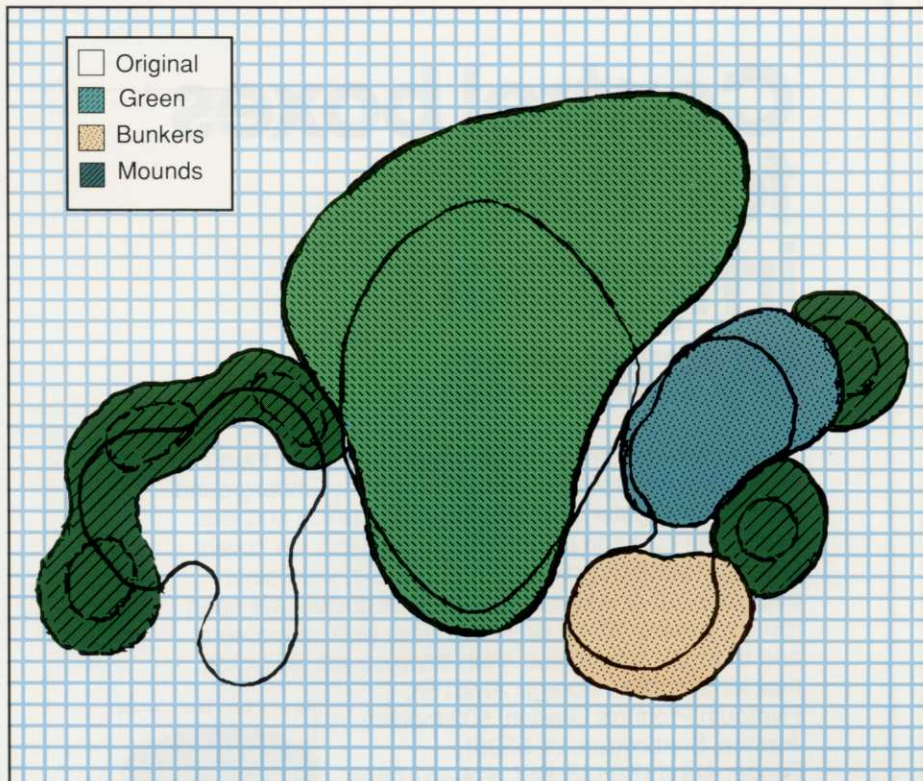
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**No. 1 — Lots of Ross character left**

*"The current green is a good example of a Ross-style plateau green that bleeds off to the left and right rear. The proposed green would restore the green to its former size, extending the green to the left rear, rear and right rear. This would restore some very strategic pin positions. The right front bunker would be re-cut into a Ross pair that sets against the fill pad of the green so as not to restrict visibility of the putting surface. The left bunker would be re-worked into a Ross-style chipping area maintained at fairway or apron height — a good precursor to a classic Ross hazard that we want to repeat throughout the course."*

**-Brian Silva**



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EVERHART PHOTOGRAPHICS



**Before and after  
a tale of two greens**

Was the renovation at County...  
ful? Judge for yourself. Left is a...  
renovation with Silva's sketches...  
of the finished product. Right is...  
"before" photo of the fifth hole

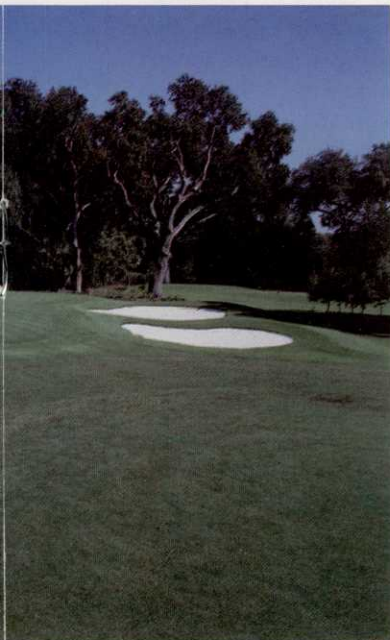






# d after... two holes

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.



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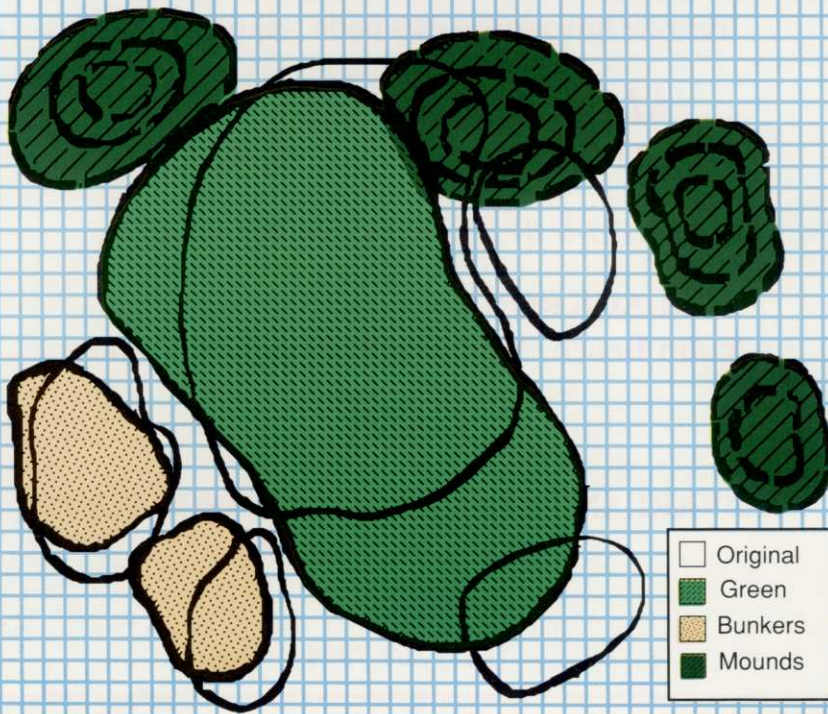


KIEFFER/JANLARK

## 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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## 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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## FGCSA SPOTLIGHT

*You at Harvard Business School.*

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.

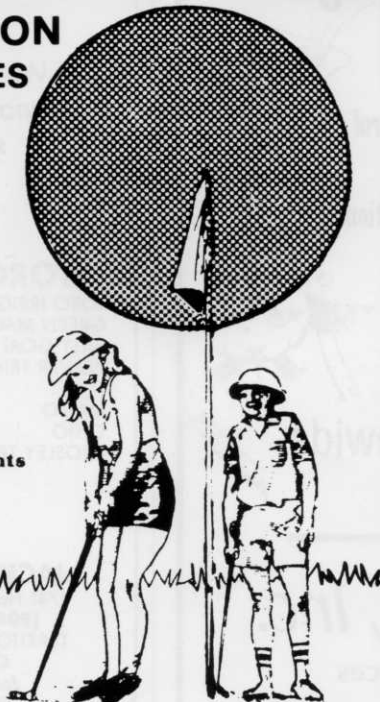
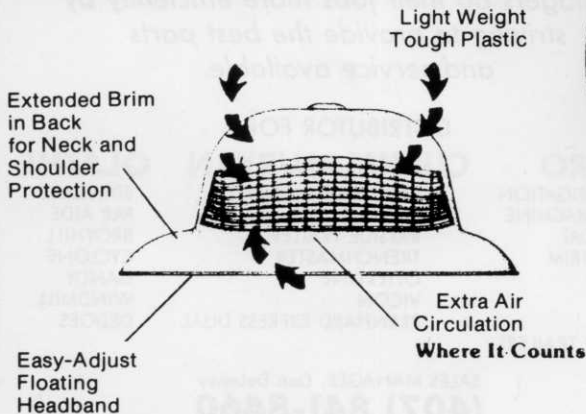
Last year's conference and show, hosted by the FGCSA in Orlando, drew more than 17,300, including nearly 1,600 from 39 foreign countries.

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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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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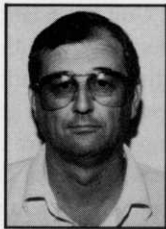
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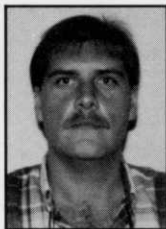
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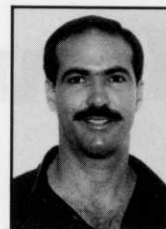
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# Turf Industry Roundup

## Brookside Labs honors former FGCSA president

Tom Burrows, CGCS, former president of the Florida GCSA now in private practice as an agronomist specializing in soils analysis, was honored by Brookside Laboratories for achieving the top sales volume among the company's international association of independent consultants. Burrows also was recognized as a certified consultant at Brookside's annual convention in Indianapolis last August.

**John R. Smith** is the new president of Vigoro Industries' Specialty Products Division. Irv Stacy remains vice president of the Winter Haven-based company which markets proprietary fertilizer products under the brand names of Par Ex and Woodace.

A graduate of the University of Notre Dame, Smith brings 26 years of marketing and sales experience to the 15-year-old Par-Ex brand.

**Century Rain Aid**, which operates wholesale distributorships of sprinkler, irrigation, landscape lighting and drainage equipment in seven Florida locations, has expanded its Fort Myers operation. The new distributorship at 6281 Arc Way not only doubles its inventory capacity but is located in a

commercial area with minimum traffic congestion.

**Clubmaster Golf Course and Country Club Software** of Fort Lauderdale has merged with Mini Business Systems, Inc., of Southbury, Conn. Clubmaster offers specialized golf and country club software including modules for club billing and receivables, golf shop operations, restaurant and snack bar operations, personnel, and grounds maintenance. Mini Business Systems offers the Profi'C Business Series of software through a network of 50 dealers in the U.S., Canada, United Kingdom and Europe. The new firm will be known as MBS Clubmaster.

**The USGA Green Section** has added a technical communications manager and an environmental specialist to its headquarters staff in Far Hills, N.J.

Dr. Kimberly Erusha, formerly an extension associate with the University of Nebraska's integrated pest management program, will coordinate the flow of technical information to the 15 Green Section agronomists and the 7,100 member clubs and courses.

Nancy Sadlon, previously a supervisor with an environmental consulting firm in Laurence Harbor, N.J., will coordinate the USGA's education activities, especially the Audubon Cooperative Sanctuary for Golf Courses Program conducted with the New York Audubon Society.

The USGA also has named

Jane F. Swiggett manager of personnel administration.

**Michael T. Russell** has joined the National Golf Foundation as senior project director within NGF Consulting, a Foundation subsidiary specializing in golf course development services. A graduate of the University of Massachusetts (B.A. economics) and Oklahoma State University (M.A. geography), Russell most recently was a land-use analyst and site evaluator for the consulting firm, Howard L. Green & Associates of Troy, Mich.

**Exhibitors** and visitors to the International Golf Course Conference and Show in Las Vegas will have the chance to preview the annual marketing research report, *Buying Habits of Golf Course Superintendents*. The report was published by the Center for Golf Course Management, a subsidiary of the GCSAA, which sponsors the annual trade show.

The report contains exclusive information on maintenance and capital expenditures, equipment inventories, customer satisfaction and course and superintendent demographics. Significant statistics are reported by state.

The preview will be from 9 a.m. to 5 p.m. Feb. 12 in the East Meeting Room B-1 at the Las Vegas Convention Center.

**The Golf Course Association** has changed its name to the National Golf Course Owners Association. The organization provides services to owners and operators of profit-oriented golf facilities that are open to the public, including more than 50 from Florida.

### Turf Industry Roundup

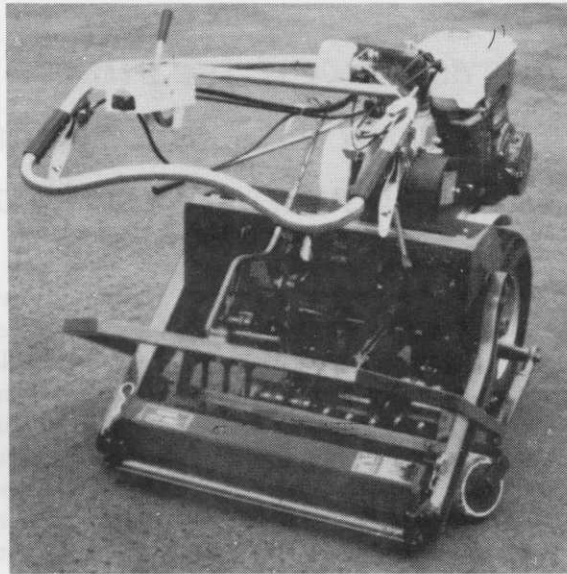
Companies doing business with golf course superintendents in Florida are invited to submit their news releases to The Florida Green, c/o Janlark Communications, 1206 Kimberle Court, Auburndale, FL 33823.



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# No more wrenches!

*Variable frequency drive pumps have been around for about a decade but are just now finding their way onto the golf course.*

BY  
KEVIN KNIGHT

**W**eston Hills Country Club opened in Fort Lauderdale Oct.

1. Although this spectacular development designed by Robert Trent Jones, Jr. has many unique features, it is the course's pump system that truly breaks new ground in Florida. Its variable frequency drive system uses less energy than conventional systems, usually eliminates water hammer and can potentially reduce course maintenance.

Superintendent Bob Drake was unsure about VFD technology, even though it has been used on Texas and California courses for several years.

"I didn't have any experience with VFD technology before this," said Drake, who has been working in the industry for 22 years.

"I was skeptical because it was a new animal and

because we have so much lightning which I thought could hurt the system's computer controls."

Since installation in the summer of 1989, however, Drake's system has "... run like a champ," he said. "We haven't had any problems so far. The protection they have these days for electronics is much better than what we used to have. And changing performance now is a piece of cake. In the past we changed (pilot valves) with a wrench. Now we make changes on the computer. No more wrenches!"

Another superintendent impressed with this new technology is Dan Jones, who has been with Banyan GC in West Palm Beach for 11 years.

"We're in the process of changing our irrigation system and pump station," he said. "I'm looking for a 25- to 30-year investment so I want to get the most for the club's money. The more I read about VFD the



*When Gator Creek Superintendent Mark Todd checks his VFD pump system, he reads the digital screen on his operator interface device (OID) and easily scrolls through complete diagnostic and historical information stored in the system.*





Most VFD pump systems use programmable logic controllers to store and manage information. The PLC above stores 165 pages of powerful computer code and can do the work of 99 conventional timers and 372 relays, such as those at bottom right of photo.

more I liked it. We decided to recommend it to our board of directors for several reasons.

"First, it saves power. We figure the system will pay for itself in six to seven years

just on electrical savings.

"Second, there's no (pressure regulating) valve in the system. It's all variable speed so the pump will deliver what you need very precisely. That prevents water surges so we

won't have pipes blowing out. Broken pipes cause a mess, they're inconvenient to members, it takes labor to fix them, they're an eyesore and you can't water the course when one is busted.

"If you add those savings in, there's no telling how quickly this thing will pay for itself."

According to John Swindle, a Tampa-based sales engineer for Flowtronex International which produced and installed the Weston Hills pump station and several others in Florida, VFD technology combines the dependability of conventional systems with the benefits of computer controls.

"VFD systems are really only new to the golf course industry. We've spent more than eight years making them for industrial applications and installing them in really harsh environments like the California desert and northern Alaska. In fact, worldwide, there are more than 100,000 VFD installations," said Swindle.

"The easiest way to picture the difference between conventional pump systems using pressure-regulating valves and VFD systems

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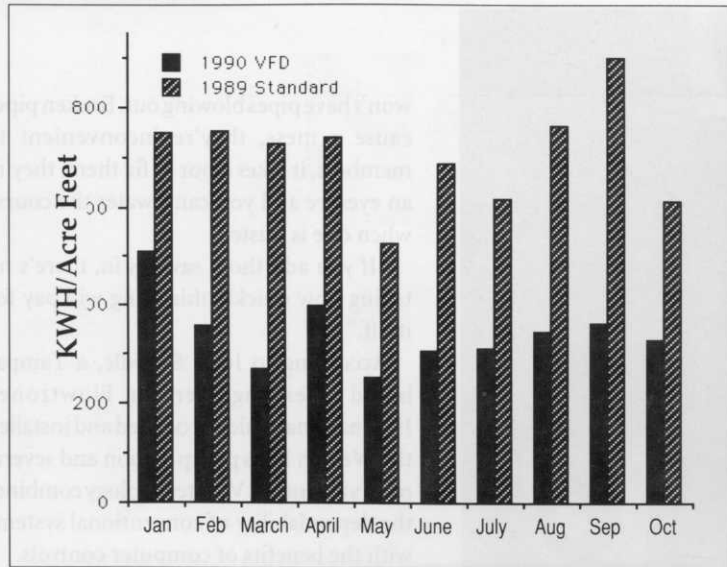
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Since switching from a conventional pump to a VFD system in 1989, energy savings averaging 52 percent have been recorded by Ed St. George of Sunrise CC in Rancho Mirage, Calif. This chart compares the amount of energy required to pump an acre foot.

down is to hit the brakes or kill the engine. Imagine what that means with a pump system. Any decrease in water pressure must occur at the control valve which acts like a set of brakes and wastes energy. Some systems use extra pumps and motors but they can cycle on and off, decreasing their useful

with computer controls is to think of cars.

"A conventional system is like a car without a gas pedal. The motor either runs full bore or it's turned off. The only way the driver can slow

lives.

"VFD systems, on the other hand, are like cars with cruise control. Computers and powerful software gradually speed things up or slow them down. Energy isn't wasted slamming water against a valve. In fact, VFD systems don't even have pressure-regulating valves. Water hammer is nearly eliminated because these systems have a 'soft run' feature which prevents sudden changes in speed.

According to Swindle, whose company also makes conventional systems, you can even hear the difference. "Stand in one pump house with a conventional system and one with a VFD system. When a conventional system kicks on, it goes right to full speed. Sometimes you'll even hear motors cycling on and off. With VFD, it's like cats' purring because the motors and pumps gradually change speed."

Because VFD technology is so new to the Florida market, very little data on cost

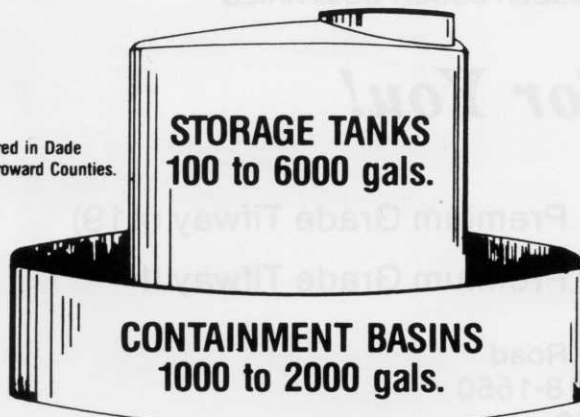
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savings is available locally. However, several managers and superintendents in California have tracked the performance of their VFD systems for years. Ed St. George has perhaps maintained one of the most detailed reports as manager of Sunrise CC near Palm Springs, Calif.

"Until we installed a VFD system in the summer of 1989, we had a conventional station with three 75-horsepower motors and a 40-horse jockey pump," he said. "Rather than repairing it, we elected to get a new system with the same size motors."

"My file for June 30, 1990, for instance, shows a 55-percent saving in energy costs. That's a cost saving of \$4,000 per month. Right now we're looking at a two-year payback and so far we haven't had any problems with the system."

Perhaps the biggest concern about VFD systems is service. Technicians and maintenance personnel familiar with conventional stations generally hesitate touching the controls on a VFD system. According to Flowtronex's Swindle, however, that shouldn't be a concern since service is always available within 24 hours.

"Properly designed VFD systems with solid-state electronics rarely go down. But if they do, automatic backup systems should keep things running until the problem's corrected," he said. "Many of these systems can actually be diagnosed over phone lines using computer modems. Technicians on the other end can check the computer memory, determine what caused the problem and quickly correct it by making

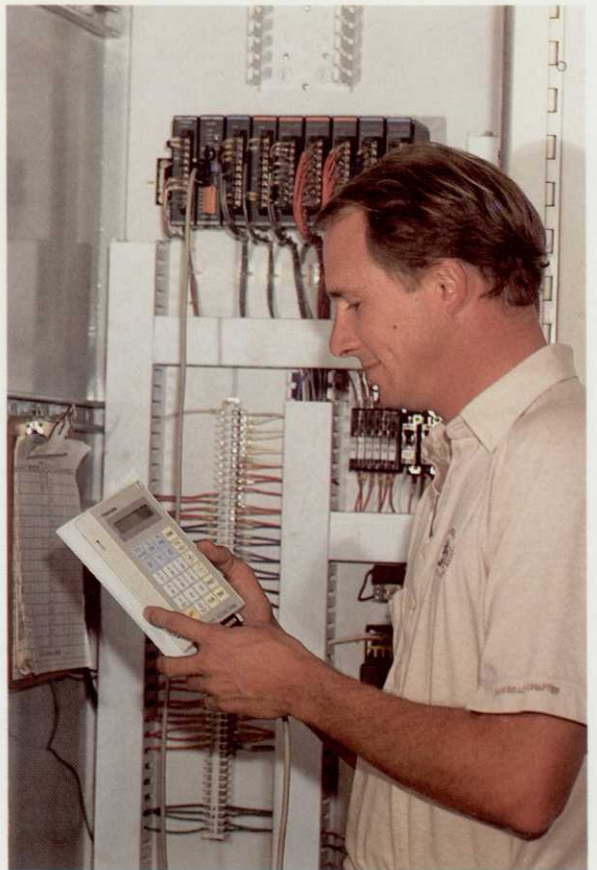
some software changes."

Although no service calls have been needed since a VFD system was installed at Gator Creek CC in Sarasota this past July, superintendent Mark Todd is interested in seeing how it continues performing.

"I'm very pleased with it so far," said Todd, who graduated from the Lake City Community College golf course management program and is a 10-year industry veteran. "It has let us maintain lower line pressures (60 psi constant pressure) and reduce irrigation breaks. I think this is going to be the way to go in the future. We're getting tighter restrictions on water use and utilities are looking at us to be more efficient."

Those thoughts were echoed by superintendent Larry Livingston who originally suggested using VFD technology at Gator Creek before moving to River Hills CC in Palo Rito.

"Each golf course and situation is different but in the circumstances at Gator Creek and most other courses, I believe that VFD is the way to go. One of the things that gave me a lot of confidence is that they're using them in a lot of municipalities. I've got a friend in the utilities business and he says it's all they use and they don't have any



Weston Hills Superintendent Bob Drake uses his handheld OID to "see" inside his VFD pump system.

problems with them."

For a growing number of golf course professionals in Florida and other states, it seems that VFD technology can help them remain competitive while reducing a variety of costs and maintenance headaches.

Kevin Knight is a publicist based in Dallas, Tex.



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# The Green Pages

*A compendium of news and opinions about government, golf and the environment*

## Don't ignore any notices from state

Two important things are taking place within the SARA Title III Program:

- Expect more enforcement activity. The State Emergency Response Commission will be working closely with the EPA to administer penalties to facilities which are in violation of the provisions of the Title III program. The penalties in this program can be substantial.

- Expect your facility's name to come up eventually if you are using Extremely Hazardous Substances (list is available from Burt McKee, UAP Florida, 813-621-4433). If you receive a Notice of Violation from the state or any other paperwork that gives a response date, *do not ignore it!*

If you do not use the chemicals or if you do not meet the threshold, then let the state know that. Once a response date has passed without a response from the facility, there is a good chance a penalty will be invoked.

- FTGA

## State provides help dealing with OSHA

Do you need help providing a safe workplace? Would you like assistance in developing training and safety programs? The state of Florida provides a service designed to help companies deal with OSHA requirements.

The program is called the 7CI program. For more information, call 904-488-3044.

-FTGA

## EPA Proposes Pesticide Storage Regulations

As authorized in the 1988 amendments to the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), the U.S. Environmental Protection Agency is proposing regulations on the storage of pesticides. These regulations are scheduled to become final in late 1991, with compliance effective two years later.

The goal of the storage regulations is to provide minimum, reasonable federal storage standards. The overall objectives of the storage regulations are to minimize human exposure, improve fire protection, ensure safe and effective spill management and cleanup, and codify good management practices.

These proposed regulations contain minimum standards for all facilities that store more than 11,000 pounds (5,000 kilograms) of pesticide products. Industry surveys of facilities and practices reveal that many agrichemical dealers and distributors meet or exceed the standards in the proposed

regulations. The intent is simply to achieve compliance by the segment of the industry that does not currently meet these minimum standards.

To meet the general standards, pesticide storage facilities must be:

- Secured and posted with warning signs;
- Floored with sealed concrete to prevent seepage through hairline cracks;
- Equipped with electricity, water and adequate ventilation;
- Equipped with two sets of personal protective clothing for spill cleanup or other emergencies;
- Built to local fire protection codes;
- Provided with secondary containment for bulk storage.

The proposed regulations also require specific operational procedures for all storage facilities. These procedures include accident prevention, inspections of containers, and employee training.

A key issue for the agency is determining who must comply with these regulations. Currently, the agency is proposing to exclude any farm, commercial applicator or other facility that stores less than 11,000 pounds of pesticide products.

Another issue is the requirement for training. Concerns have been raised by industry representatives during recent field trips that EPA regulations potentially overlap with OSHA regulations, causing confusion, compliance difficulties and duplicative training time for their employees. If employers comply with OSHA training requirements, should they be exempt from EPA training requirements?

## Reference Library

Recently released professional literature



*A Manager's Guide to Environmental Compliance*, Florida Chamber of Commerce. Lay-language overview and explanation of federal environmental laws and regulations prepared specifically for managers and supervisors to help avoid costly penalties, legal fees, down time and court costs. \$37 plus UPS shipping; 800-940-3034 or 904-222-5520 (FAX).



## Seeking the unvarnished truth

...Charlatans abound whenever an emotional issue arises which deals with unknown, potentially hazardous materials. These folks are usually better speakers and writers than knowledgeable scientists and do not have to prove anything. When faced with data from university research, they simply say that it is tainted by the influence of the anti-environment agrichemical combine. Period.

To cope with this kind of reaction, the USGA Research Committee has embarked on a three-year national research program to help us:

- Understand the effect of turfgrass pest management and fertilization on water quality and the environment.
- Evaluate alternative pest control measures in integrated turf management systems and
- Determine the human, biological and environmental factors that golf courses influence.

The intriguing thing about this project is that it seeks the unvarnished truth. If

our present practices are faulty, golf will have to clean up its act.

In addition to information gathering, a manual will be developed with the GCSAA to provide consistent information on integrated turfgrass management practices that ensure environmental quality. The program is not meant to cast doubt on recent research efforts, but to expand the scope of research and involve all areas of the country.

Local-level research is necessary to help us cope with problems unique to specific areas. These programs need and deserve the support of golf and golf course superintendents' associations. National-level funding is becoming more difficult. Maybe this is the time for everyone to become involved on a more personal basis.

*-James Latham, Director, Great Lakes Region, USGA Green Section*

## Private sector does it better

...We want (the Clean Air Act) to have a positive effect on our environment and to make our country a healthier place to

live. But we don't need to bankrupt American businesses in the process. I will monitor the impact of these changes to the law — the first adjustments to the Act in 20 years — to be sure that they are achieving their intended goal of a cleaner environment as efficiently as possible.

Our environmental consciousness has reached the corporate level as well. Witness McDonald's recent announcement that it will replace styrofoam containers with biodegradable packaging. This reflects the American consumers' demand for more responsible treatment of our planet and their willingness to sacrifice convenience for environmental concerns.

It is interesting that the American people rejected the more extreme environmental initiatives on the Nov. 6 ballot all across the nation. It would appear that they have concluded once again that the private sector can do the job better than government bureaucracy and regulation.

*-U.S. Congressman Andy Ireland, Report to Florida's 10th District, December 1990*

The agency welcomes comment on these issues, the proposed storage regulations and their potential impact on the golf course industry. Please direct these comments to Rob Denny, Janice Jensen or Tracy Bone, Pesticide Management and Disposal Staff, Environmental Fate & Effects Division (H-7507C), Office of Pesticide Programs, EPA, 401 "M" Street SW, Washington, DC 20460; telephone 703-557-5288; fax 703-557-9309.

*Column by Robert Denny, Office of Pesticide Programs, U.S. Environmental Protection Agency in GCSAA Government Relations Briefing, October 1990. Reprinted with permission.*

## GCSAA Government Relations Briefings

*(Every month, members of the Golf Course Superintendents Association of America receive a two-page briefing on government relations developments affecting the golf industry. Below are summaries of the topics covered in the last three briefings. If your superintendent is a GCSAA member, he should have copies of the complete briefings on file. If he isn't, call 1-800-GSA-SUPT for membership information.)*

• What do you do with old, used tires? Almost 60 percent of worn tires are disposed of illegally.

• Florida is one of several states that has launched a pilot program under the Endangered Species Protection Act.

• An international treaty will halt production of halon, a popular fire-fighting agent, by the year 2000. Superintendents considering halon systems for their pesticide storage buildings or other club facilities should stay aware of existing options.

• Until Dec. 22, EPA's underground storage tank efforts have centered on after-the-fact cleanup; now the agency intends to step up compliance enforcement.

• Users are demanding better, more uniform material Safety Data Sheets (MSDS's).

MSDS's, which are provided by manufacturers for each of their products, are a vital part of golf course superintendents' Hazard Communication Programs.

• The U.S. Supreme Court refused to review a case in which a developer was sentenced to a three-year prison term and fined \$200,000 for illegally dumping landfill in a wetlands area.

For more information on wetlands, contact the U.S. Fish and Wildlife Service, Department of Interior, 1849 C Street, NW, Washington, DC 20240.

• The Netherlands plans to reduce chemical pesticide use by 50 percent by the year 2000.



**H**appy New Year to one and all, and welcome to the middle of our “winter season” here in Florida! That time of year when our northern members have retreated from the ice and snow to join with thousands of others who flock to our courses in the winter to make it our “busiest season.”

I keep using the word “season” because my attention was brought to focus on that word last October. I had the good fortune

to be invited to speak at the Wisconsin GCSA Turf Symposium in Milwaukee and got to meet a lot of northern superintendents.

# Season?

## WHAT Season?

I overheard several congratulating each other as they celebrated the end of another “golf season.”

I thought to myself, “We have hurricane season, love bug season, holiday season, thunderstorm season, snowbird season, and summer tourist season, but a ‘golf season?’ Shoot, we have ‘golf season’ all year!”

They use the winter hiatus to take time off and recharge their batteries and get ready for next spring. They couldn’t imagine having to keep after it all year long. We discussed that fact and they asked me, “How do southern superintendents stay pumped up all year?”

I explained that in cooler months, our turf growth slows down and, while we are very busy with play, some turf management routines are a little more relaxed. But as I thought about that statement, I realized that more and more courses are overseeding wall to wall or using more fine-bladed

grasses on their greens like bentgrass and poa trivialis which call for more care and concern. So here we are in the winter up and down the state, managing various degrees of dormant, semi-dormant, or actively growing bermudagrass and all sorts of combinations of overseeded golf courses. We just can’t wait for spring when we groom out the overseeding and watch as the bermudagrass goes into high gear.

So how do we cope? How do we stay pumped up all year? We take a day off once a month to attend a local superintendent chapter meeting, or we leave early once and awhile to play a round of golf with our peers or, if we have the support of our clubs, we may be able to take a week off in February to attend the GCSAA Turf Conference and Trade Show. So, over the span of the year, we might take off a total of a month scattered throughout the year. This doesn’t count vacation time, which often is taken only one week at a time.

Unlike our northern colleagues, who drain their irrigation lines and equipment radiators and lock up shop for two or three months, we must take our breaks in little chunks. In fact you can always tell the Sunbelt Superintendents at the GCSAA Conference: they’re the ones on the phones during seminar breaks, calling back to their assistants to see how things are going.

Quite frankly, when superintendents take these golf-related breaks, they’re just out there getting more training and information that will help them do a better job. We never really get to forget about the job for a long time.

Think about that the next time your superintendent asks for some time and travel money to take a little break during Florida’s “golf season.”

## Green Side Up



*Joel D. Jackson*

Joel D. Jackson, CGCS



# READ

...the fine print.

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Total nitrogen (N)	32%
0.8% ammoniacal nitrogen	
24.5% urea, methylene urea nitrogen	
6.7% water insoluble nitrogen	
Available phosphoric acid (P <sub>2</sub> O <sub>5</sub> )	3%

Scott's ProTurf

**GUARANTEED ANALYSIS**

Total Nitrogen (N)	19%
5.5% Water Insoluble Nitrogen	
3.9% Urea Nitrogen	
Available Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> )	5%
Soluble Potash (K <sub>2</sub> O)	9%
Magnesium (Mg)	10%
Sulfur (S)	6.0%
Iron (Fe)	1.0%
Manganese (Mn)	0.5%
Nutrient Sources: Urea, Methylene Ureas, Ammonium Phosphate, Ammonium Sulfate, Ammoniated Superphosphate, Sulfate of Potash, Oxides, Ferrrous Sulfate, Sulfates.	
Potential Acidity Equivalent 1300 lbs. Calcium Carbonate per Ton.	

Lebanon Country Club

**GUARANTEED ANALYSIS**

TOTAL NITROGEN (N)	24.0%
1.6% Ammoniacal Nitrogen	
11.6% Urea Nitrogen	
10.8% Water Insoluble Nitrogen	
AVAILABLE PHOSPHORIC ACID (P <sub>2</sub> O <sub>5</sub> )	4.0%
SOLUBLE POTASH (K <sub>2</sub> O)	12.0%
Magnesium (Mg)	0.7%
Sulfur (S)	5.0%
Iron (Fe)	0.4%
Derived from ammonium phosphate, isobutylidene diurea, urea, sulfate of potash, sulfate of potash-magnesia and iron sulfate. Potential Acidity 1000 lbs. Calcium Carbonate Equivalent per ton.	
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Only Par Ex contains IBDU—a unique Water Insoluble Nitrogen source that is 100% available to your turf in a single growing season. Consider that urea formaldehyde products (bacteria and temperature released) contain about one third of their WIN in the form of plastic polymers. Its long-term Nitrogen

release is so slow, it's almost useless, and will most likely occur during the hottest periods, just when you don't want it.

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