

BRIEFS



TWEDT CITED FOR STEWARDSHIP

DES MOINES, Iowa — Ottumwa Country Club superintendent Gary Twedt has been honored with the Environmental Stewardship Award by the Iowa Alliance of Environmental Concerns (Ia AE). It was presented during the 64th Iowa Turfgrass Conference and Trade Show here Jan. 27. Twedt was given the award for his environmental sound management practices and public participation in educating people about turfgrass and the industry.

USGA SETS PHOENIX CONCLAVE

PHOENIX — The United States Golf Association (USGA) Green Section is conducting a regional conference at Phoenix Country Club on March 18, focusing on a



variety of topics from rye-grass and bentgrass to water irrigation surveys, water

quality and greens committees. The 7:30 a.m. to 3:15 p.m. conference will feature talks by USGA Construction Education Director Jim Moore and Regional Affairs Manager Ron Readl USGA Foundation Fellow Tea Dixon, Dr. Joe Duich of Penn State University; International Sees' Craig Edminster; Center for Irrigation Technology Director David Zoldoske; and Arizona Country Club Green Chairman Dr. Paul Rowe.

SPEAKERS PROGRAM EXPANDS

WASHINGTON, D.C. — The Golf Course Superintendents Association of America, Professional Lawn Care Association of America and RISE (Responsible Industry for a Sound Environment) report that their Ambassador Speakers Program has expanded into four Northeastern states. The joint outreach program motivates and prepares industry representatives to educate the public about the green industry's environmental benefits and to address consumer concerns.

BROWN HEADS ROCKY MOUNTAIN

The Rocky Mountain Golf Course Superintendents Association has elected a new board of directors, headed by President Dave Brown of Flatirons Golf Course (GC). Vice President is John Fitzgibbons of Meadows GC, and Secretary-Treasurer is Jim Wilkins of Arvada GC. On the board are Lee Terry of Pinehurst Country Club (CC), Mike Brennan of LaPlata Investments, Bobby Murtaugh of Perry Park CC, Rusty Oetker of Soil Horizons, Doug Jones of the city of Grant Junction, Gregg Blew of Wellshire GC and Doug DeVries of Montrose GC.

Seawall woes keep Pebble Beach busy

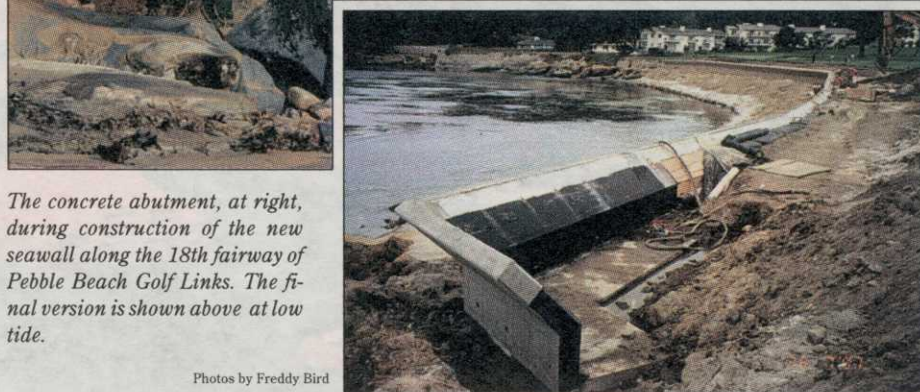
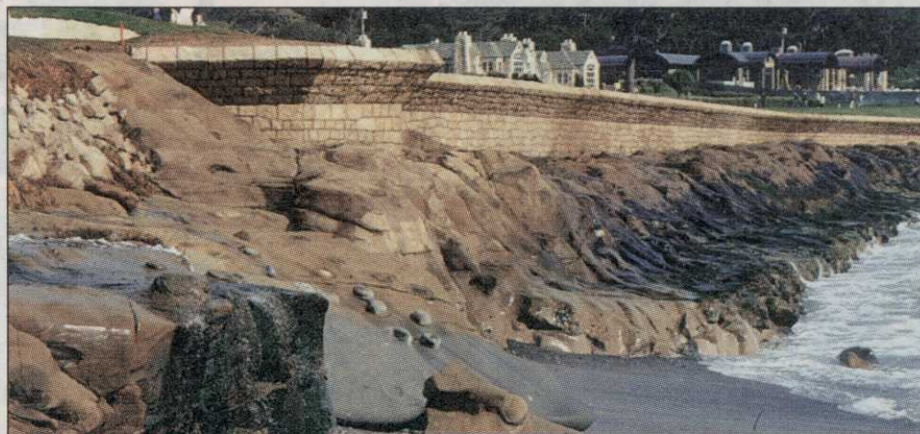
By DOUG SAUNDERS

PEBBLE BEACH, Calif. — Pebble Beach Golf Links is considered one of the greatest golf courses in the world and a strong part of its lure is its proximity to the turbulent Pacific Ocean. Golf holes literally cling to the cliffs overlooking the blue waters while the pounding surf adds to the mystique of the course.

The same relentless sea, meanwhile, works hard to eat away this golfing treasure. In the last year the Pebble Beach Company has begun a series of projects to not only determine the threat to the coastal links but also rectify the actions of nature where possible.

The first project, the construction of a formidable sea wall along the 18th fairway, was completed last fall and has already been tested dramatically by the El Nino weather that has plagued the Central California coastline for the last two months. The wall also received notoriety during the recent AT&T Pebble Beach National Pro Am as the heavy surf sent waves over the wall and on to the fairway.

Television cameras and commentators focused on the new wall as waves spilled over the wall and flooded the bunker 110 yards from the green. Competitors that hit their second shots near the coast had to be careful not to



The concrete abutment, at right, during construction of the new seawall along the 18th fairway of Pebble Beach Golf Links. The final version is shown above at low tide.

Photos by Freddy Bird

get splashed by the surf that occasionally slobbered over the wall. The wall itself accentuated the normal wave action lending itself to dramatic camera views and many questions as to the effectiveness of the wall itself.

"We hired a firm to make a comprehensive study of the erosion of land along the nearly two miles of coastline that Pebble Beach sits on. Their findings showed that we lose on the average 4

Continued on page 20

Fla. law sends researchers rushing for nematode cure

By MARK LESLIE

NAPLES, Fla. — Turf-killing nematodes are a problem for golf course superintendents in the South and, in Florida, where the government has drastically reduced application of the major remedy, it appears nobody has the answer for the pest.

"There are a lot of claims, and we try them all," said Gary Grigg, superintendent at Royal Poinciana Golf Club here. "But none of them work since the state cut back on the label for Nematicur."

Bayer Corp.'s Nematicur has been the mainstay in the ongoing battle against nematodes, microscopic roundworms that attack plant roots. But a major fish kill at a golf course on the East Coast of Florida changed all that. After the accident — from misapplication of the highly toxic Nematicur — the state cut in half the

application rate, greatly reduced when and how many acres could be treated at once, and forbid people from re-entering a treated area for 24 hours.

Many companies have introduced products to replace Nematicur, but the search for success is still on.

"Unfortunately, there have been no silver bullets," said Dr. Robin Giblin-Davis, an entomologist and nematologist at the University of Florida at Ft. Lauderdale. "We've evaluated a lot of different materials that people claim have anti-nematode effects and we have not seen anything that works effectively."

"The more we look, the more chance we have of finding the Achilles heel. But,



in the final analysis, I am not encouraged."

Grigg said DuPont's Telone is showing "some effectiveness," and he has found "a quick response from a couple of products, but the nematode popula-

tion doesn't stay knocked back. In two or three weeks the nematodes are back."

"I have 36 holes and spent \$40,000 last year on nematode control and felt I had bad results all the way around," he said. "We treat every Monday. The soil temperatures this time of year [winter] are cool and they're not so much a problem. They're worse in early summer, coming out of the winter. May is a bad month."

As effective as Nematicur was at its origi-

Continued on page 26



Role of digital mapping expected to grow

By KEVIN P. CORBLEY

In this final article on the uses of Geographic Information System (GIS) and Global Positioning System (GPS) technologies on the golf course, we look into the future of digital mapping applica-

LAST OF 3 PARTS

tions. GPS, GIS and other digital mapping technologies are now commonly used in numerous land management businesses, and golf course management will be no different. Larry Rodgers, president of Larry Rodgers Design in

Lakewood, Colo., expects digital mapping will boom on golf courses in the next several years.

"These mapping techniques have already been proven to improve worker efficiency and enhance revenues in major industries such as agriculture," said Rodgers. "Look for course superintendents to start borrowing technologies from the farmer."

To facilitate his irrigation design business, Rodgers has been using GPS

Continued on page 23

Nematodes presenting new challenge in face of Fla. law

Continued from page 17

nal label, Grigg said, it didn't work for him last year under the new restrictions.

"University data shows Nematicur is still the most effective product for nematodes. But, since we can't use as much material, its residual effect isn't as good," acknowledged Dr. Greg Pagano, field sales representative for Bayer in Florida.

"We've gone to all-spot treatment," Grigg said. "And I've taken a different approach to the problem. If I can't kill the nematodes, the only thing I can do is increase root growth and try to outgrow them. We've taken to aerifying and putting down high rates of organic fertilizer, trying to increase the health of the plant. If you can stimulate root growth, it helps.

"But you have to stay on it. The ultimate answer is if somebody can breed a variety of grass that nematodes don't like. Several plant breeders are working on that."

Indeed, researchers thought GN1 Bermudagrass might have nematode resistance. But they've concluded it is not resistant, but merely an aggressive turf.

"We have evaluated some of these grasses," said Giblin-Davis, "and we find sting nematodes like them all."

He did add that some of the new ultradwarf Bermudagrasses have "a more prostrate growing habit. We want a grass that will make a beautiful green coverage below the mower. If it's adapted to a low mowing height, it maximizes its photosynthetic area below the mower. That is the strategy: grow plants with roots that are vigorous but have a more prostrate leaf growth habit.

"Some ultradwarfs may be more tolerant only because they're not getting their hair cut so drastically. Tifeagle, Quality, Classic, PF-11 and Tifdwarf all have problems with sting nematodes... But they may do better than Tifgreen. We have looked at ryegrass with endophytes, but haven't seen anything helpful. And we have tried to find plants and microorganisms that produce toxins that kill sting nematodes, but without success.

"Work funded by the USGA [U.S. Golf Association] on a new species of bacterium that attacks and kills sting nematodes has been encouraging in field trials, but more work is needed to discover a method of mass culture of this fastidious organism for widescale releases. In terms of practical management of sting nematodes in golf course turf, we are basically limping along."

Giblin-Davis endorsed Grigg's strategy of growing a healthier plant, adding: "We're trying to produce fit grass within the extreme limits of the golf game."

It is difficult to "outrun" nematodes, he said, because "they are interested in feeder roots, and if you help the feeder roots you encourage them as well."

Meanwhile, it appears that microbes in the soil eat Nematicur as a carbon source. L.T. Ou at the University of Florida in Gainesville has found that if you let the soil go for a year or two without Nematicur, then put Nematicur back on the soil, the microbes are less apt to take it apart, Giblin-Davis said.

"Nematodes are always part of our [research] screening process," said Bayer's Pagano. "We'd like to have something that is more benign than Nematicur. But as we enter this coming season, Nematicur is there. Bayer does believe Nematicur, properly applied, can be used safely. The new rates do

knock down nematodes pretty well. The problem is that residual isn't there. ... We ask that superintendents look at the weather forecast to avoid thundershowers" that could push off the chemical into water sources."

All of this leaves Florida superintendents scratching their heads, especially those at older courses, because they have greater problems with nema-

Continued on next page

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Melting Out (Leaf Spot)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Anthracnose	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fusarium Patch	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Necrotic Ring Spot	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Red Thread	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Spring Dead Spot	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Summer Patch	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Take-all Patch	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pink Snow Mold	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Gray Snow Mold	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Yellow Patch (Cool Weather Brown Patch)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Gray Leaf Spot	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pink Patch	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Southern Blight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Turfgrass Diseases

ZENECA Professional Products

Florida researchers studying a bacteria to fight sting nematodes

By MARK LESLIE

FT. LAUDERDALE, Fla. — University researchers are feverishly at work to discover an anti-nematode that works effectively.

At the University of Florida at Ft. Lauderdale, entomologist and nematologist Robin Giblin-Davis has particularly studied

the effect of the bacteria *Pasteuria* on sting nematodes — by far the largest and deadliest of the nematodes on turf. Dr. Don Dickson of the University of Florida in Gainesville has done extensive research on *Pasteuria penetrans*, which works on root-knot nematodes. But

scientists have not been able to mass produce either type of *Pasteuria*.

This newly discovered bacteria *Pasteuria* is especially promising because it is parasitic and “usually very host-specific,” Giblin-Davis said. “The first one discovered, *Pasteuria ramosa*, attacks

water fleas. All the others discovered since then appear to attack nematodes.”

While several years of study have shown the *Pasteuria* has an effect on sting nematodes, Giblin-Davis said scientists have reached an impasse with mass-culturing them.

“It’s not easy to grow lots of

bacteria. And there are some things we still don’t understand,” he said. “More biology has to be done to find how they grow and sporulate.

“Another problem is that because it is so specific, it kills one nematode but then other kinds of nematodes move in.”

A California golf course may bring the answer. Soil with sting nematodes somehow got introduced into a Palm Springs course, and the soil doesn’t have the *Pasteuria*,” Giblin-Davis said. “So, working with Dr. Ole Becker at the University of California at Riverside, we will introduce the bacteria at fairly low amounts and see if it takes off. If it does, and we don’t need a lot of spores ... then we might be able to find sites or rear up fields of nematodes with the bacteria and hand out small batches of this for golf courses to try. We’re sort of working toward that.”

Dr. George Snyder of the University of Florida at Belle Glade said sting nematodes do not live well in root zones with 20 percent clay.

“That would solve the sting nematode problem, but with thousands of rounds of golf being played, you’d have compaction, fungus and other problems,” Giblin-Davis said.

“If I had lots of post-doctoral students working with me and hundreds of thousands of dollars in funding, we could speed up this process,” he said. “They spend millions of dollars looking at cancer and this isn’t any less complicated. But people are most concerned with medical health — and grass is not viewed as that important overall. It’s important if you’re a golf course superintendent and it means your job.”



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Fla. law change

Continued from previous page
todes than new facilities.

And they wonder about the wisdom of the state’s decision to curtail the label on Nemacur, said Tim Hiers, superintendent at Collier’s Reserve in Naples.

“If you really need Nemacur,” Hiers said, “and you can’t use it properly — the way the original label says — the paradox is, you will use more water, more fertilizer, more pesticides, more herbicides, more labor, and more electricity for a less vigorous turf. How much sense does that make?”

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