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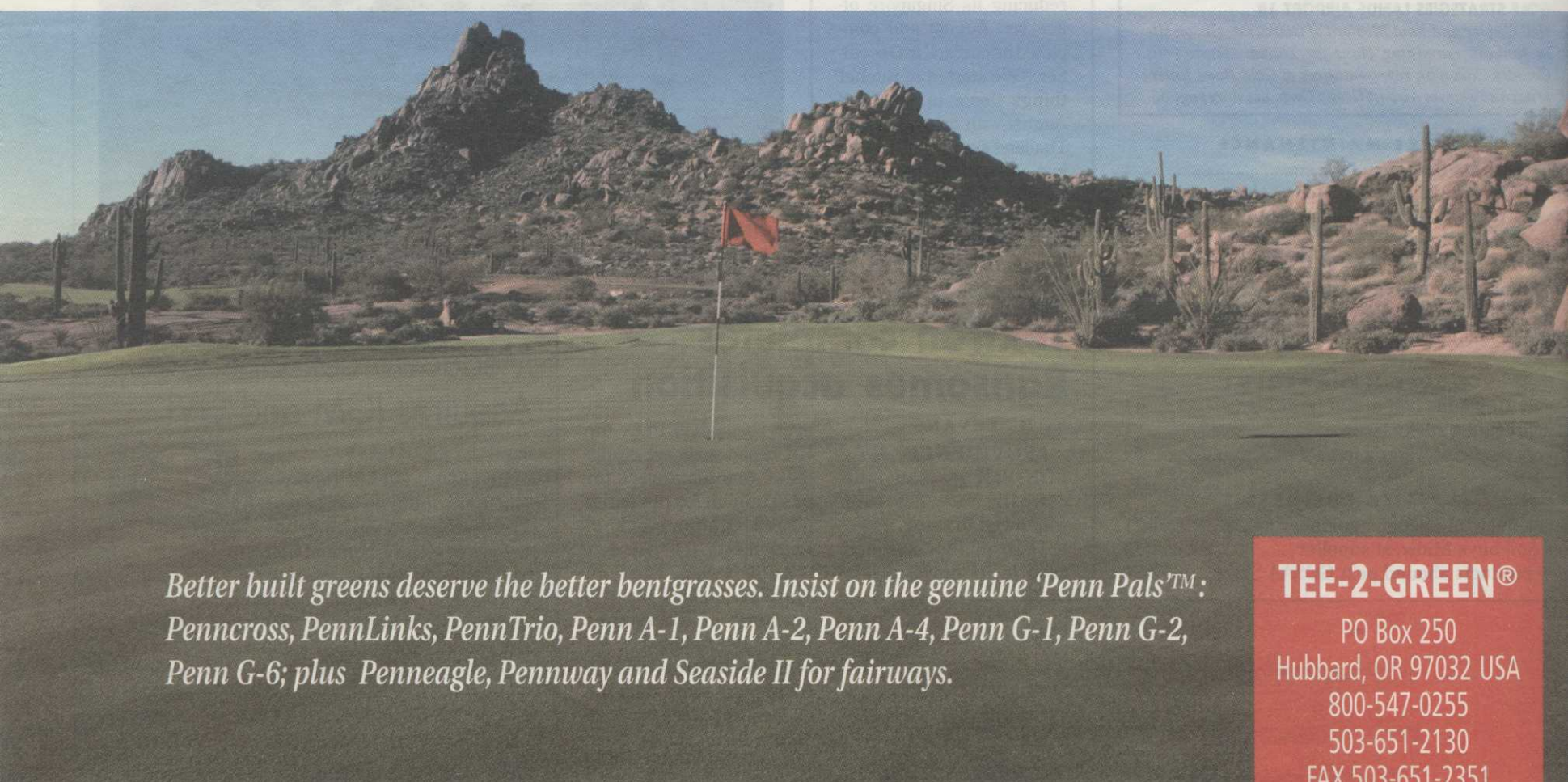
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*- Wayne Mills  
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Valencia, California*



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WEEK 1



WEEK 2



WEEK 3



WEEK 7



WEEK 8



WEEK 9

# Switch To A Reduced Rate\* Daconil U For A Great Looking Course W



golf courses around the country. Now, more and more superintendents are discovering that Daconil Ultrex fungicide, with its exclusive Super

Thanks to their unmatched sticking and staying power, Daconil® fungicides have long demonstrated superior broad spectrum disease control at

Weather Stik™ formulation, sticks and stays so well, you can use it at much lower rates\* on a regular 7 to 10 day, preventative schedule for even better results.

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WEEK 4



WEEK 5



WEEK 6



WEEK 10



WEEK 11



WEEK 12

# Ultrax<sup>®</sup> Short Interval Spray Schedule Week After Week After Week.

program stops disease before it can start, and that's one reason this approach makes so much sense.

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after a 1/2" rain stress (SEM - 500X)<sup>††</sup>



**GENERIC FUNGICIDE**

after a 1/2" rain stress (SEM - 550X)<sup>††</sup>

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\*For best results, we recommend using 20% lower application rates on a 7-10 day schedule. Section 12(a)(2)(G) of FIFRA provides that it is unlawful for any person "to use any registered pesticide in a manner inconsistent with its labeling"; quoted language is defined in section 2(ee) of FIFRA and expressly excludes the act of "applying a pesticide at any dosage, concentration, or frequency less than that specified on the labeling unless the labeling specifically prohibits deviation from the specified dosage, concentration, or frequency." Thus, in the absence of specific label prohibitions, it is not unlawful under section 12(a)(2)(G) to use a registered pesticide at a dosage, concentration, or frequency less than that specified on the labeling of the pesticide.

User must have label in possession when applying these rates.

†For a copy of our Daconil Ultrex Super Weather Stik Guarantee, write to Daconil Ultrex Guarantee, ISK Biosciences Corporation, Turf & Specialty Products, 1523 Johnson Ferry Rd., Suite 250, Marietta, Georgia 30062

†† Micrographs have been colorized for demonstration purposes.





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Crabgrass on 6.

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one problem  
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Goosegrass



Dollar Spot  
Summer Patch  
Anthracnose



Pythium  
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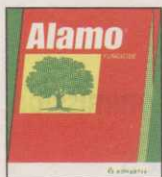




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Brown Patch



Oak Wilt  
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Fire Ant Control



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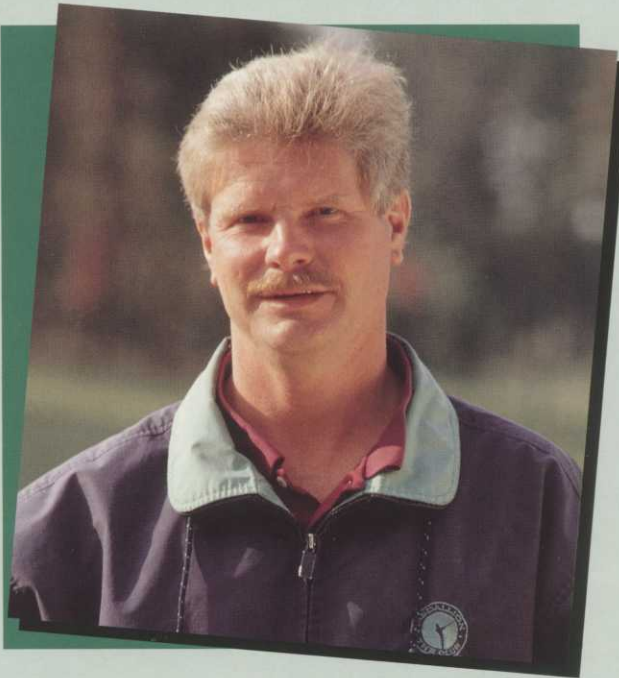
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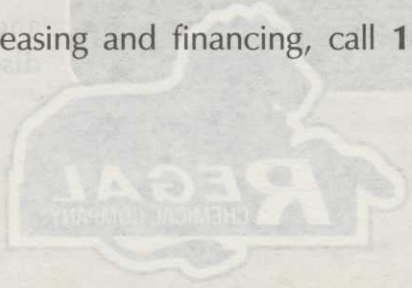
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# GPS technology a time- and money-saver for progressives

Continued from page 17

to map course features and GIS to collect information about these features for more than a year. As a courtesy, he leaves the digital maps created from the GPS/GIS data for his clients to use in course operation. Many of them now contact Rodgers just to map their courses. Course managers are finding

These technologies have the potential to remove many of the time-consuming hassles associated with personnel and government regulations.

— Larry Rodgers

on a map-like computer screen. For instance, the GIS database can display all the elm trees on the course, show which fairways

are due for fertilizer this week, or visualize proposed changes to the course layout. "It's great for operational efficiency to have the GIS show the real-time locations of all golf carts on the course," said Rodgers, "but the real payoff will be in daily maintenance." As evidence Rodgers cites the

uses of GPS and GIS in farming. Currently, farmers use GPS to plot the locations of irregular fields in their fields, such as areas that need more water, less fertilizer or an extra shot of fertilizer. They load this digital information into a GIS map of their field, which helps them devise a customized application strategy. This tailored plan for application of water or treatments is programmed into a small computer in the farmer's combine, which is equipped with what is called variable rate technology (VRT). VRT is a computerized application system that automatically applies a prescribed dose of fertilizer or water to specific areas as the GPS-equipped combine is driven through the field. The GPS tells the VRT where it is in the field at any given time, so the VRT knows exactly where to apply the chemical doses.

This system is sometimes referred to as "prescription farming" because of the precise doses applied, but the technology is not expected to stay on the farm for long. "Turf manufacturers are developing similar equipment for their vehicles," said Rodgers. "They're working on computerized spray devices that can be connected to a GIS map and automatically apply extra chemicals as directed to certain parts of the fairway or about the maintenance pond or wetland."

And one of the biggest advantages of designing and carrying out chemical application programs on a GIS is that a digital record of every project is maintained for easy reporting to EPA and other government agencies.

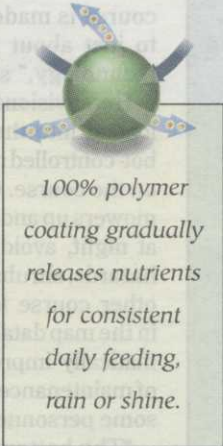
Rodgers predicts golf course managers will begin seeing variable rate technology linked to GIS and GPS in the next two to three years. A few more years down the road, he sees another new technology accessing GIS on the course — robotics.

"Once a digital GIS map of the course is made, it can be linked to other digital data," said Rodgers. "GIS maps being used to control mowing equipment and GPS will guide the mowers down the fairways, water bunkers and any other features contained in the map database. This will drive the efficiency of the maintenance crew and reduce some personnel problems. The bottom line is efficiency and cost savings," said Rodgers. "These technologies have the potential to remove many of the time-consuming hassles associated with personnel and government regulations, which will let the manager focus on the land business in the first place."

Some personnel problems. The bottom line is efficiency and cost savings," said Rodgers. "These technologies have the potential to remove many of the time-consuming hassles associated with personnel and government regulations, which will let the manager focus on the land business in the first place."



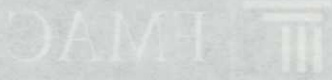
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We know golf finance is a lot...



# Nematodes presenting new challenge in face of Fla. law

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


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

Giblin-Davis endorsed Greg'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."

Continued from page 17  
nal label, Greg said, it didn't work for him last year under the new restrictions.  
"University" data shows Nemasur 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 Pagan, field sales representative for Bayer in Florida.  
"We've gone to all-spot treatment," Greg said. "And I've taken a different approach to the problem. 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 fertilizing 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 GNI Benthams might have nematode resistance. But they've concluded it is not resistant, but merely an aggressive type.  
"We have evaluated some of these grasses," said Giblin-Davis, "and we find some nematodes like them all."  
He did add that some of the new ultrawide Benthams grasses have "a more prostrate growing habit. We want a grass that will make a beautiful green cover, age 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 ultrawide grasses may be more tolerant only because they're not getting their hair cut so drastically. The quality, quality, Classic, 64-11 and Liberty all have problems with nematodes. But the ultrawide grasses haven't seen anything helpful. And we have to be realistic about the fact that we have to kill the nematodes, but without using Nemasur." Work funded by the U.S. Golf Association's Environmental Steward Award has been encouraging in field trials, but more work is needed to develop a method of mass culture of this fastidious organism for widespread release. In terms of practical management of strong nematodes in golf courses, that we are basically limping along."

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### INSIDE

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COPY FRANK ON THIS!



**ALL IN THE FAMILY**  
Robert Trent Jones Sr. (left) has teamed with elder son Bobby to form a new architectural entity, RTJ Golf Ventures. For story, see page 37.

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### Image enhanced but golfers insist on 'green' look

PLAYERS SURVEYED ON SUPER'S ROLE

By PETER BLAIS  
ORLANDO, Fla. — Most golfers view superintendents as trained professionals and the person most responsible for course conditions — news course managers should find encouraging considering national efforts to elevate their image. Disturbingly, however, few golfers recognized the Golf Course Superintendents Association of America (GCSAA) as the superintendents' national organization. Also troubling was the unwillingness of most golfers to accept poorer playing conditions in exchange for reduced chemical and water use on their courses. According to a recent survey of golfers conducted by the National Golf Foundation...  
Continued on page 30

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#### SENSITIVE STROKES

Architect Ron Galt worked sensitively around wetlands at the newly opened Indian River Club. Located in Vero Beach, Fla., Indian River is only the third course in the world to be granted Audubon Signature status. The course also embodies the Environmental Principles for Golf Courses recently issued at the conference on Golf & The Environment... see page 163

ING!  
MORE!  
INFO!

Tricky someone is steering!

#### STUDY SHOWS:

### Name designers pull higher dues and green fees

By PETER BLAIS  
HARRISBURG, Pa. — Private courses designed by signature architects command higher initiation fees and monthly dues. Architectural facilities, green fees, preliminary study per... sylvania and a... student... of the study is... tually help devel... opers determine the potential benefit of hiring or not hiring a signature architect in specific markets, and perhaps the difference in hiring one signature ar...  
Continued on page 3

#### Griffiths



Shinn Golf Club in Niigata, Japan, a new design from incoming ASGCA president, Denis Griffiths.

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MAKE THE CALL!

### on course costs

By MARK LESLIE  
Worried the cost of golf is starting to drive people from the game, the incoming and outgoing presidents of the American Society of Golf Course Architects have presented arguments that would lead developers to make harsh choices about their projects. Picking sides in a point-counterpoint atmosphere, Past President Jeff Brauer of Goltsapes in Houston and new President Denis Griffiths of Braselton, Ga., agreed construction costs have escalated too high but disagreed over the cure. "Ten years ago there were few upscale daily-fee projects," Griffiths said. "Everyone today is doing..."  
Continued on page 46

COPY & ROUTE

### Ciba-Sandoz deal creates new firm: Novartis

By HAL PHILLIPS  
Consolidation in the chemical trade continues apace, as Des Plaines, Ill.-based Sandoz Agro and Greensboro, N.C.-based Ciba — both divisions of enormous Swiss-owned pharmaceutical and life sciences conglomerates — have agreed to join forces, creating a \$6 billion agricultural giant. The new entity will be known as Novartis. Bill Liles, head of Turf & Ornamental, his fourth... separate identity in a decade. F... s... Then came Ciba-Geigy, lo...  
Continued on page 57

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