

# GOLF COURSE NEWS

THE NEWSPAPER FOR THE GOLF COURSE INDUSTRY

A UNITED PUBLICATION  
VOLUME 11, NUMBER 2  
FEBRUARY 2000 • \$6.00

## INSIDE

### Wetlands Regs Tighten Screws

New Nationwide Permits are delayed until April, but will be tougher..... 45

### Aventis Env'l Science Unveiled

Revamped Chipco Professional Products Division to serve golf industry ..... 75

### Best Builders of the Year



#### GCN'S GOLF COURSE BUILDERS OF THE YEAR

*Golf Course News'* annual Builder of the Year Award will be presented to Allan MacCurrach III, right, president of MacCurrach Golf Construction. The Best Small Builder of the Year Award will go to Golf Development Construction, represented by Managing Partner Louis Miller, left. The awards will be presented during the Golf Course Builders Association of America's annual banquet on Feb. 18 in New Orleans.

#### COURSE MAINTENANCE

Scientists forecast major droughts ..... 29  
Dershimer's Tools of the Trade ..... 41

#### COURSE DESIGN & DEVELOPMENT

Schulties gaining steam..... 45  
R.I. unveils latest First Tee project ..... 46

#### COURSE MANAGEMENT

eteetime.com names Raney president ..... 69  
Walker takes NGCOA's Rossi Award ..... 70

#### SUPPLIER BUSINESS

Griffin gives GCSAA Foundation \$250,000 ..... 8  
Deere, Toro wrangle over patent ..... 75

#### PERIODICAL



**SUPERINTENDENTS STEAM INTO NEW ORLEANS**

For a preview on the 71st International Golf Course Conference & Show, Feb. 14-20, see pages 17-28.

## Gene that limits plant growth discovered

By ANDREW OVERBECK

SAN DIEGO — A team of genetic scientists at the Salk Institute lead by Dr. Joanne Chory have discovered the gene that controls plant height by limiting the activity of a growth hormone. The scientists have been successful in transferring the gene to tobacco plants and experiments are underway with rice. If

### Prospects are bright for no-mow turfgrass

that works, potential applications in turfgrass may not be far off.

"If it works in tobacco there is promise," said Dr. Mike Kenna, director of research for the United States Golf Association (USGA). "If

they can get it to work in corn or rice, then the chances of it working in turf go from promising to highly possible."

In the popular press, the discovery of the growth gene has garnered headlines touting the possibility of "no-mow" turf, prompting joy among homeowners who believe they will

Continued on page 10

## Century's Top Supers: Sherwood Moore, Warren Bidwell

By PETER BLAIS

Warren Bidwell and Sherwood Moore were the most influential superintendents of the 1900s, according to a *Golf Course News* survey of past Golf Course Superintendents Association of America (GCSAA) presidents, former Canadian Golf Superintendents Association presidents and current GCSAA chapter presidents.

Bidwell — a 64-year GCSAA member, national direc-



Sherwood Moore



Warren Bidwell

tor and Distinguished Service Award winner — received the most votes among deceased nominees.

He was followed, in order, by Colonel John Morley and Chester Mendenhall (tied for second), Joe Valentine, Leo Feser, Arthur Snyder, Harold Stodola, Bill Lyons, Marshall Farnham and Tom Johnson.

Moore — a longtime GCSAA member who served as

Continued on page 27

## New openings eclipse 500

By MARK LESLIE

JUPITER, Fla. — The golf boom of the 1990s has continued into 2000—in a record-eclipsing way. Some 509 golf courses came on line in the United States in 1999, surpassing the record 468 set in 1995, according to the National Golf Foundation (NGF).

At the same time, the pipeline continues to be full. At the end of the year, 946 courses were under construction and 908 were in planning. This compared to the end of 1998 when 1,069 were under construction and 708 were

Continued on page 3



### GOLF BOOMING INTERNATIONALLY

*The Hole of the Gods — the 3rd hole at Golfplan-designed Bonari Kogen Golf Club in Numajiri, Japan — is one example of the mountains of work being done expanding golf throughout the world. See a report on international course construction, pages 61-68.*

## Meadowbrook becomes 3rd-largest manager

By PETER BLAIS

BEVERLY HILLS, Calif. — Meadowbrook Golf Group has acquired the balance of Fairways Acquisition Corp., the entity formed to facilitate last fall's 30-course acquisition of KSL Fairways from KSL Recreation Corp. Meadowbrook now owns 100 percent of Fairways Acquisition Corp.

KSL Fairways was the non-resort division of KSL Recreation, which continues to own such high-profile properties as Doral in Miami and LaQuinta and PGA West in Palm Springs, Calif.

Fairways Golf consisted of 24 golf properties primarily in Virginia, Maryland,

Continued on page 72



## No-mow grass

Continued from page 1

never have to mow their lawns again. Reaction from superintendents has been equally optimistic, albeit a bit more sober.

"This will likely not be a cure-all," said Ken Mangum, director of golf course and grounds at Atlanta Athletic Club in Duluth, Ga. "But it would be great to have on my gold tees, where nobody every plays but I still have to mow three or four times a week."

Much work must be done, however, before this genetically modified turfgrass comes onto the market.

### THE SOUND OF SCIENCE

While doing fundamental research on how plants respond to their light environment scientists identified a gene that destroys a class of hormones called Brassinosteroids that stimulate cell division and expansion.

"We found that when the gene, BAS1, is overexpressed it destroys Brassinosteroids," said Dr. Michael Neff, lead researcher on the project and senior scientist for work being done at Washington University in St. Louis. "The end result is a dwarf plant that is dark green and slower growing."

What makes this discovery unique is that they have amplified a gene in plants as opposed to mutating it, making it easier to apply to other plant species.

"Because it is over-expressed, you should be able to take it and put it into any plant that you can transform with foreign DNA," said Neff. "A lot of genetics involves discovering the function of genes by knocking them out and making a mutant or sick plant. But in this case we can take it right out of one plant and put it into another."

In tobacco plants, the gene produced plants that matured at 6 inches as opposed to 6 feet. However, in those trials, the researchers discovered that as the DNA is inserted into the genome they got a range of expression levels.

"The gene behaves like a volume knob which means that you can have dwarfs that are as high as just under 6 feet or as low as 6 inches," said Neff. "So you can pick the line that you like best and it will be transformed and that effect will be propagated on from generation to generation."

### ON THE COURSE

According to turfgrass scientists, conventional plant breeding has been heading in this direction for some time.

"When you get a dwarf plant, you are selecting for plants that are less efficient at cell elongation," said Kenna. "When you think of Kentucky 31 tall fescue, what was selected was finer texture and a slower growth habit."

Leah Brillman, director of re-

search for Seed Research of Oregon, hopes the discovery of the gene will give turf researchers a better idea of what has already been accomplished. "We have been selecting for dwarf varieties for a number of years and we may actually have plants that are using this gene and we just don't know it," she said. "Knowing about this gene may make it easy to select for it."

But, the question remains, will

this transgenic turf be usable?

"I don't see any reason why this wouldn't work," said Kenna. "But the \$64,000 question is, how much control do you want to have in the growth process? Do you want a plant that inherently wants to grow and you apply a plant growth regulator (PGR) to slow it down, or do you want a plant that inherently doesn't want to grow and you have to apply something to make it grow?"

James Nicol, superintendent at Hazeltine National Golf Club at Chaska, Minn., would rather err on the side of growth.

"I don't use PGRs. I like the grass being able to recover because up here we get a lot of play," he said. "This type of grass may be wonderful on pond and creek banks, bunker faces and out-of-play areas, but whether it would be good for tees and

greens remains to be seen."

While Mangum agrees that wear and tear would be the ultimate test for the transgenic turf, he is already dreaming of the possibilities.

"If I could apply something that would make the right half of the fairway grow more where cart traffic is coming on and off and keep the growth down on

Continued on next page

# WHO NEEDS "FOOTPRINTS"?

Now, by popular request, here is the new way to put an end to those exasperating grooves, depressions and compaction on your greens and tees, which can easily effect your players' scores. Our new turf sprayer is engineered to a surprisingly light weight, so it leaves no "footprints" and is always kind to your finest turf - and to your players.

## Introducing Our SPRAY STAR 1000





## No-mow grass

Continued from previous page

the other half, that would be great," said Mangum.

According to Neff, it may be possible to dial in exactly the amount of growth you want. "These grasses need to grow, or you will never be able to propagate them," said Neff. "There are promoters that determine where and when the gene is expressed,

so you might be able to hook up this gene with a different promoter and regulate its expression with the application of chemicals."

Cutting down on growth, however, may not mean a drastic reduction in the frequency of mowing.

"To a large extent, mowing is done not only to combat top growth, but to make the turf look

tidier. You may be able to get away with mowing only four times a year, but in between that, the turf is going to look pretty ratty," said Dr. Doug Brede, research director for Jacklin Seed.

### THE FUTURE

Neff and his colleagues are working on transferring the gene to rice plants and expect that it will be five to 10 years before a modified turf variety is available

on the market. Among his concerns are human and animal safety, disease resistance, regulatory issues and marketability. The risks of hybridization with native plant species will also be studied in the coming years.

"We will be looking at how the gene works in a number of different plant species, including trees and grasses," said Neff. "Once we have accomplished that, we hope

to attract a private biotech company that is interested in pursuing this further and actually moving it into the varieties of grass that people would be using. Then we can get into product-driven research."

Turf scientists, meanwhile, remain cautiously optimistic. "Until they get some of these things out of the lab and see what they look like in practice, I am not going to invest my money in it just yet," Brede said.

# NOT YOUR GREENS AND TEES

**Our All-New Spray Star 1000.** The turf sprayer that will take the worry out of damage to your most important turf areas. With its very light weight and extra-soft turf tires, its psi adds up to only seven. Hydraulic drive and power steering make it particularly maneuverable and its spray controls will give you the precision you want and need. The spray tank has a very low center-of-gravity and profile - and carries a Lifetime Guaranty. Only from Smithco.



**SPRAY STAR 1000**  
110-Gallon Capacity

**The Spray Star 1600P/H.** Our mid-size sprayer, now available with your choice of our new and exclusive hydraulic drive, or mechanical drive. It features a new-design polyethylene tank with especially low profile and boom-wheel kits to maintain precise spraying accuracy on the most uneven terrain. Only from Smithco.

**SPRAY STAR 1600P/H**  
160-Gallon Capacity  
New Hydraulic Drive



**The Spray Star 3000.** Our big-capacity sprayer for those big jobs and big areas. Its quiet, Ford, water-cooled engine delivers plenty of power for its big payload - and its automotive-type steering gives it the maneuverability you like. With many operator safety features, including a filtered-air cab.



**SPRAY STAR 3000**  
300-Gallon Capacity

**Many Other Special Features.** Two types of safety control switches for maximum operator protection ■ clear water wash tanks ■ three spray control options for exact pressure adjustments and boom control ■ soft-touch tires front and rear for superior weight distribution ■ excellent stability on sloping terrain and hills

Your Smithco distributor would like to show you why we are a leader in all types of turf spraying equipment. Call now for a demonstration. Seeing is believing.

ALWAYS OUT FRONT  
**SMITHCO**  
WAYNE, PENNSYLVANIA 19087  
[www.smithco.com](http://www.smithco.com)

## Chlorpyrifos

Continued from page 4

government relations liaisons."

The GCSAA also submitted a comment on chlorpyrifos stating that it was a valuable pest control tool and that user exposure risks are not high.

Going forward, chemical reassessments under the Food Quality and Protection Act of 1996 (FQPA) will continue to affect superintendents and the GCSAA will be on full alert.

"We will be conducting a survey that will gather information on chemicals that are coming up for review ... it should be helpful to the agency to show chemicals are being used effectively and safely," said Riordan.

In addition to chlorpyrifos, several chemicals are in EPA's re-assessment pipeline: acephate (Orthene), ethoprop (Chipco Mocap), fenamiphos (Nemacur) and trichlorofon (Dylox and Proxol).

In the meantime, Dow is proceeding with various studies to avoid any use restrictions on chlorpyrifos. Dow has commissioned a Nebraska laboratory to conduct human tests to determine chlorpyrifos' possible side effects on people.

"One of the elements of FQPA is that the EPA wants to have more information about compounds. One of the things lacking is non-food exposure data," said Maniscalco. "We are trying to fill in these data areas and we are continuing to do studies and tests on these compounds."

While human testing has proved controversial with the EPA, Maniscalco insists that the tests are safe and have to be done.

"We go through medical board reviews and up until now these have been accepted by the EPA," said Maniscalco. "Ultimately this gives us a much wider margin of safety because we have greater confidence in relating the animal data to humans. It is one of the most-studied pesticides."

If everything goes smoothly, the EPA should release its revised risk assessment by March or April. That will be followed by another 60-day public comment period and subsequent review period after which the EPA will issue its final assessment on chlorpyrifos.