

THE FUTURE

Over a thousand superintendents were on the ROOTS® Greens Program in 2000.



ROOTS
1-2-3
PREMIX

0-14-20
ORGANIZED ANALYSIS
Available Phosphate (P₂O₅) 14.00%
Soluble Potash (K₂O) 20.00%
Total Nitrogen (N) 1.00%

DIRECTIONS FOR USE

Apply 2 ounces per 1,000 sq. ft. of turf area. Mix into soil when preparing bed or topdress after planting.

ROOTS
StandUp
concentrate

0-2-12

Guaranteed analysis
Available Phosphate (P₂O₅)
Soluble Potash (K₂O)
Derived from Potassium Sulfate
Phosphate and Potassium Nitrate

Directions
Apply 2 ounces per 1,000 sq. ft. of turf area. Mix into soil when preparing bed or topdress after planting.

StandUp® may be applied as

Net 2.5 gallons/9.5 liters (27.5 L)

roots TURF FOOD

15-3-8
FINE GRADE

ROOTS® turf food is a natural, organic based specialty fertilizer derived from plant and animal meals, and fertilized with both slow release and quick release soluble nitrogen. It provides complete nutrition for turfgrass plus organic material to increase microbial activity in soil or sand.

Guaranteed analysis

Total Nitrogen (N)	15.0%
0.75% Ammoniacal N	
1.75% Urea N	
2.00% Water Soluble Organic N	
3.50% Slowly Available Water Soluble N*	
7.00% Water Insoluble N*	
Available Phosphate (P ₂ O ₅)	3.0%
Soluble Potash (K ₂ O)	8.0%
Calcium (Ca)	1.0%
Total Magnesium (Mg)	0.5%
0.25% Water Soluble Magnesium (Mg)	
Total Sulfur (S)	1.0%
1.0% Combined Sulfur (S)	
Copper (Cu)	0.1%
Iron (Fe)	1.0%
Total Manganese (Mn)	0.3%
0.05% Water Soluble Manganese (Mn)	
Zinc (Zn)	0.1%

Derived from: Feather meal, meat and bone meal, urea, methylene urea, potassium sulfate, dicalcium phosphate (bone meal), monoammonium phosphate, kelp meal, iron oxide, iron sulfate, magnesium oxide, magnesium sulfate, manganese sulfate, zinc oxide, copper oxide.

*0.5% Slowly available release Nitrogen derived from feather meal & methylene urea.

Net 50 lbs. (22.67 kg)

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Application Rates

Greens & Tees
3.3 lb. product (172g N) per 1000 sq. ft. every 4 weeks

Fairways, Athletic Fields, Lawns
5 lb. product (348 g N) per 1000 sq. ft. 4 1/2 bags per acre

Ornamentals & Flower Beds
2 lb. product (6 cups) per 100 sq. ft.
Mix into soil when preparing bed or topdress after planting

Typical Spreader Settings:

Uls. Nit 0000	1/2	3/4	1.0
50 lb. N/20 lb. bag	15000	20000	25000
Rotary Spreader	1.374	1.928	2.400
Carbine	4	4 1/2	5 1/2
Earthmover	30	35	40
Leaf	1	1 1/2	2
PDS Probes	4.0	5.0	6.0
Scout 847	6	7	8
Scout 850	6	7	8
Scout 851	4.1	5.0	6.4

WARNING
KEEP OUT OF REACH OF CHILDREN. DO NOT INHALE OR GUST. PRODUCT MAY CAUSE IRRITATION TO EYES OR SENSITIVE SKIN. MATERIAL SAFETY DATA SHEET IS AVAILABLE UPON REQUEST. FOR LONGEST STORAGE LIFE, KEEP SEALED TIGHTLY AFTER OPENING AND STORE IN A DRY PLACE.

Warranty Limitations
There are no warranties that extend beyond the guaranteed analysis on the face hereof. All claims against guarantees are limited to replacement of product or refund of purchase price, or by law.

Worth Its

BY BRUCE ALLAR

You can take this grass variety to the bank — of a seaside estuary. You can take it to the shore of the ocean or to an inland area plagued by shortages of fresh water. In fact, you can take it anywhere in warm-weather climates where nonpotable water is the best irrigation option. It's a grass that thrives on saltwater, and it grows well even when drinking from recycled or effluent sources.

Its name is seashore paspalum, and special strains of it are now being marketed for greens, tees and fairways. It's also being touted by one researcher as "the environmental turfgrass." As the world's population increases and per-capita consumption of potable water skyrockets with it, the days of adequate freshwater for irrigation purposes may be numbered. Thus, paspalum has hit the golf industry at a time when superintendents will welcome such a hardy grass with open arms.

"Seashore paspalum has the potential for use with high concentrations of salt, which would meet with one of our objectives, which is less use of potable water," says Jim Snow, national director of the USGA's Green Section. The USGA has funded research on this turfgrass since 1992 to the tune of \$30,000 per year.

Ronny Duncan, along with Robert Carrow, literally wrote the book on the subject (*Seashore Paspalum: The Environmental Turfgrass*, Ann Arbor Press,

2000). The pair, professors at the University of Georgia at its Griffin, Ga., campus, teamed with architect Pete Dye to debut the turf at his Casa de Campo course in the Dominican Republic. Dye views the grass as a godsend.

"All the island courses in the Caribbean have dried up," Dye says. "Now they can come back. This grass will put them back in business."

Duncan has bred two paspalum strains: Sea Isle One for fairways and tees and Sea Isle 2000 for greens. He has created a Web site so courses can look at the grasses he's developing (www.griffin.peachnet.edu/cssci/turf/paspalum/paspalum.htm). It lists only 24 U.S. growers of the Sea Isle cultivars, so supplies are still limited.

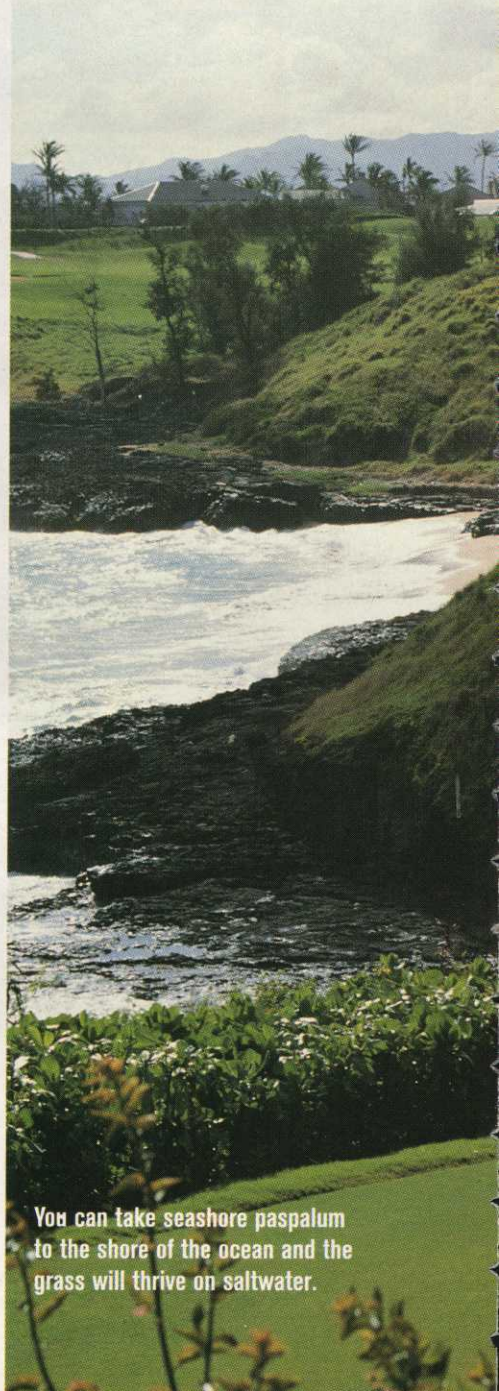
Still, both will be installed at Casa de Campo, where fresh water is restricted, but seawater below a nearby dam is available in unlimited quantities. "There will not be sufficient volumes from growers to do a whole course until 2001," Duncan says.

"We're pushing all of the environmental buttons with it because potable water is going to be gold," Duncan says.

Seashore paspalum grasses are the most salt-tolerant warm-season turfgrasses, according to Duncan. They can grow with exposure to ocean water salt levels of 34,400 parts per million (ppm). They also do well in effluent and recycled waters, which often feature high salt and contaminant levels. "So far, I haven't found a single recycled water it won't take

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MIKE KLEMM



You can take seashore paspalum to the shore of the ocean and the grass will thrive on saltwater.

Salt

Because of its sodium tolerance,
Seashore paspalum grass may become a
key variety for superintendents in areas
plagued by a lack of fresh irrigation water



Worth Its Salt

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and thrive on," Duncan adds.

Duncan and Dye made their paspalum connection in the early '90s. Dye maintains a residence in Delray Beach, Fla., and a membership there at The Little Club, a par 3 next to the ocean. A long-time member at the course, Dye noticed patches of naturally occurring paspalum thriving there despite water at up to 1,500 ppm salt. About five years ago, when he was having trouble with salt-spray and dieback on ocean-exposed bermudagrass tees at his Teeth of the Dog course in the Dominican Republic, Dye made a transplant.

"I took this hybrid paspalum down to the Dominican Republic and I planted it on tees that are only four or five feet above the sea, so they're almost in the water," Dye says. "That grass is fine. The tees are like a putting surface."

Dye brought Duncan down to see the results of his Teeth of the Dog experiment. Now there's a 40-acre Dominican Republic nursery with the Duncan hybrids, which is supplying the turf for the Dye-designed Casa de Campo.

Another paspalum turf course will open this winter in Naples, Fla. Developers of Old Collier GC in Naples worried about their irrigation supply from the Cocohatchee River, which can be nearly fresh after rains, but is brackish as seawater during dry periods.

Tim Hiers, golf course manager at Old Collier, spoke with superintendents at some of the 65 courses worldwide (many of them in the Pacific Rim) that currently use seashore paspalum. He traveled to Hawaii, where the grass was introduced on golf links in the 1980s, and saw it thriving on three courses, each in a different climatic zone. One was in a wet climate, one was on a dry side of the island and one was in between.

"It was the trip to Hawaii that sealed

our decision," Hiers notes. "Once we started studying the grass, we decided we wanted it, no matter what our water situation was."

Instead of bermuda, Hiers has been grassing Old Collier with Sea Isle 2000 on the greens and tee tops and Salam everywhere else. Salam is a seashore paspalum that has been available from Southern Turf since 1998. Hiers says the University of Florida will do on-site research on his paspalum grasses with an eye on future uses. "We felt this would be an easier grass to manage than bermuda," he adds.



With per capita consumption of potable water increasing, the days of adequate freshwater for irrigation may be numbered and golf courses will have to turn to other water sources.

Proponents of the grass note that it's greener than bermuda, has a deeper, more fibrous root system, has waxy leaves that are more dew-resistant, requires less fertilizer, better resists insects and prospers under cloudy weather conditions.

"The thing we have to cover is cold, cloudy weather in Florida, and that's where this grass excels," Hiers says. "Its recuperative ability seems to be better than bermuda. It grows by rhizomes and stolons. It's a rapid mover."

The USGA's Snow says he thinks the new grasses could be revolutionary.

"They've been found on courses for years, but no one has spent the time to find strains best for golf," Snow says. "It has never been worked on and improved."

Dye describes seashore paspalum's

playability as less than the best bentgrass, but "as good as any bermuda."

Duncan and Carrow applied for funding after spotting a recommendation in minutes published by a USGA research committee that seashore paspalum be studied. Duncan released his two cultivars after six years of work.

"I've got a couple more coming," he says. "The next one that's probably going to come out seems to be resistant to insects." This fairway-type grass could help cut down on pesticide use.

The grass should be managed with less water and fertilizer than bermuda. "If you put too much water or too much fertilizer on it, you're in trouble," Duncan adds.

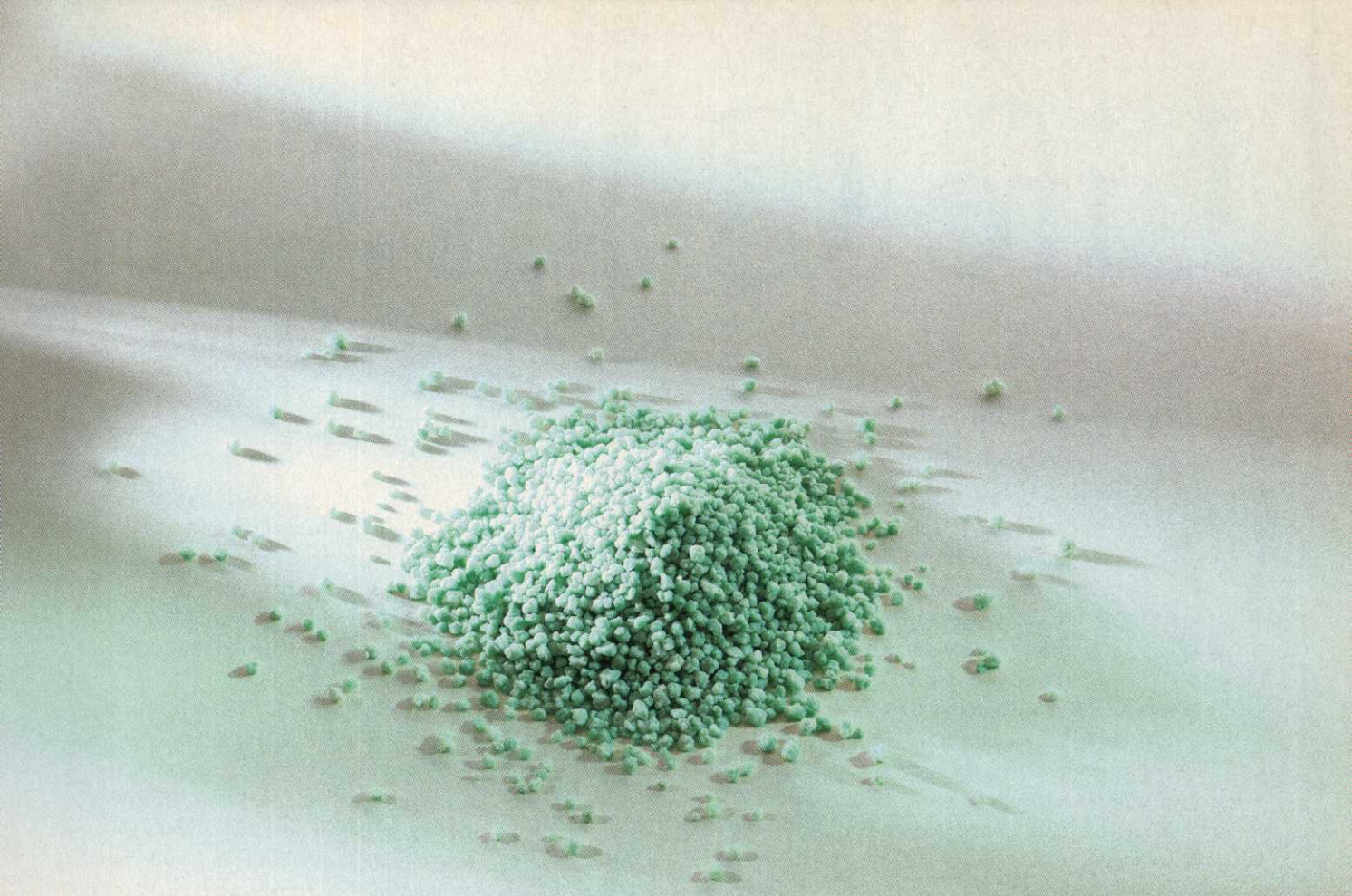
Seashore paspalum's geographical range is limited. Duncan says it will grow where most hybrid bermudas now exist, from the transition zone to the South, but not at higher latitudes. Snow says that areas such as northern Georgia and other parts of the transition zone may not support seashore paspalum. "In the next few years, we'll see more cold-hearted bermudagrasses in the upper transition zone where they've not been used before," Snow says.

He also points to promising research on saltgrass, a salt-tolerant warm-season turf that can grow all the way to Canada. Saltgrass shows promise for courses in the West, although it may not prosper in humid portions of the Midwest.

Saltgrass, like bermuda, goes dormant in the winter. But Snow says golfers are beginning to accept the winter browning of these grasses in these water-restricted times. Still, he expects that before use of the grass becomes widespread, he will have to change some attitudes about it. "Most people won't change their attitudes unless they're forced to change them, but that's already happening," Snow says. ■

Allar is a free-lance writer from Floyds Knobs, Ind.

MIKE KLEMM



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Life Goes On

Golfdom's millennium kids are a year older. Are they a year wiser?

BY FRANK H. ANDORKA JR., ASSOCIATE EDITOR

Last year, they were students on the verge of entering the golf course maintenance industry. They each had their own hopes and dreams about where they would be in 10 years, and they each had their own perception of the industry. But they had two things in common: They wanted to care for golf courses and promote the game they love.

This year, they're veterans with a year of experience. So what lessons have *Golfdom's* Y2K kids learned? We talked with them again to find out:

John Nachreiner

"The weirdest thing for me was becoming a full-time worker this year instead of being a seasonal one," says Nachreiner, assistant superintendent at Egypt Valley CC in Grand Rapids, Mich. "When you're a student, you gear up in the fall to start classes and take tests. This year, there was nothing like that to prepare for, other than getting the course ready for winter."

Nachreiner, who decided to enter the profession after being struck by the natural beauty surrounding him on a golf course in Bozeman, Mont., graduated from Michigan State University. He found a job within a couple of weeks. He joined Egypt Valley because it has regularly hosted a Senior PGA Tour event since 1986.

"The tournament experience was amazing," Nachreiner says. "Every day was a new challenge, and you learned more during tournament time than at almost any other time."

Nachreiner had to balance individual problems — setting up spectator areas, putting together skyboxes and helping the television crews set up, to name a few — with the agronomic issues of preparing for a tournament, such as green speeds and

fairway height. He also learned lessons about water management that he didn't learn at Michigan State.

"I discovered that you can push grass further than I ever thought," Nachreiner says. "At first I panicked, but I quickly learned that grass could go without water for a few days [and not suffer] long-term damage."

He's excited about this new chapter of his life, which he plans to make longer than the chapters he wrote as a student.

"When you're in school, you write short chapters," Nachreiner says. "Work ends, school starts, school ends and work starts again. All of that changes once you get your first job. This is the start of longer chapters in my life, and I'm looking forward to writing them."

Kevin Tansey

When *Golfdom* talked to Tansey last year, he wanted to return to the Black Course at Bethpage State Park in Farmingdale, N.Y., where he had interned the previous summer. The Black Course hosts the 2002 U.S. Open, and Tansey wants Major experience. He briefly considered a few jobs in Virginia, but the lure of the Open was too strong. So when he was offered a full-time position at the Black Course, Tansey jumped at the chance.

"I'm planning to stay here throughout at least 2002," Tansey says. "It's a good place, the money is good, and I like Long Island (N.Y.). I may want to stay in the area even if I move on from this course."

Tansey had a busy summer. After graduating from State University of New York at Cobleskill (N.Y.), he put in a spring and summer at hallowed Augusta National, where he was one of 55 crew members. When asked how much money they spend on keeping Augusta in pristine condition, Tansey quiets down.



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writing them."**

JOHN NACHREINER
ASSISTANT SUPERINTENDENT
EGYPT VALLEY CC
GRAND RAPIDS, MICH.

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Circle No 120





Continued from page 46

"We're not allowed to talk about those things," Tansey says secretively. "I had to sign an agreement that I wouldn't reveal anything for 10 years. All I will say is that it shows how much you can do with a lot of money."

When his work at Augusta was done, Tansey returned to the Black Course as one of two assistant superintendents. He

says he's grateful to head superintendent Craig Currier (who oversees all of Bethpage State Park's courses) and Garret Boddington, superintendent of the Black Course, for having him back. Equally important, he married wife Christine in October. She is a teacher and tolerates Kevin's long hours well.

"Summer was my busiest time and it was her slowest time,

so that took a little getting used to," Tansey says. "But I'm lucky. I've heard stories from other superintendents who don't have spouses as understanding as mine."

Steve Richau

Life's lessons are often learned the hard way, and Richau has a lesson that he would teach all students before they leave school: Research the area you're planning to move to before you take a job.

Richau graduated from Lake City Community College in Lake City, Fla., and took a job at Bull Run CC in Haymarket, Va. He, his wife, Kim, and his now 9-month-old daughter Sadie started looking for places to live in the area. They quickly realized they couldn't afford to live in the Fairfax County/Washington D.C. area.

"It was beautiful course and the people were great, but it was completely unworkable from a personal standpoint," Richau says. "Kim and Sadie were living two hours away (in Staunton, Va.), and I was living near the course. The commutes to see each other were killing us. We knew it couldn't go on."

So Richau moved more than two hours south to work at Stoneycreek at Wintergreen Resort in Wintergreen, Va., as

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"Kim and Sadie were living two hours away (in Staunton, Va.) and I was living near the course. The commutes to see each other were killing us. We knew it couldn't go on!"

**STEVE RICHAU, SPRAY TECHNICIAN/
SECOND ASSISTANT SUPERINTENDENT
STONEYCREEK AT WINTERGREEN WINTERGREEN, VA.**



his short tenure at Bull Run.

"It was not an easy decision to leave Bull Run after only three months, but you have to do what's in your family's best interests," Richau says. "It caused me a lot of sleepless nights, but I know that I made the right decision."

Richau says he chose Virginia because he wants to

Continued from page 48

work in the transition zone. Other superintendents told him that if he could grow grass there, he could grow grass anywhere. He doesn't know if he'll stay in Virginia forever, but he's enjoying himself now.

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He says Stoneycreek's director of golf, Fred Biggers, and superintendent, Craig Taylor, were understanding about

"Students shouldn't be afraid to take risks," Richau says. "You may go through hard times at first, but they will be worth it in the end."

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