

BRIEFS



**RENAULT NAMED TO NATIONAL PANEL**

BETHESDA, Md. — George Renault III, a disabled American veteran who is superintendent at Burning Tree Club here, is excited about his recent appointment to the Recreation Access Federal Advisory Committee. A director of the Golf Course Superintendents Association of America, Renault is on a 27-person committee chosen to recommend "what's needed and what's minimum to get people up and down on the golf course" and other public facilities, he said. Starting July 15-16, the group will meet twice-monthly, anticipating to make its recommendations in six months.



George Renault III

**GCSAA PICKS BYRON NELSON**

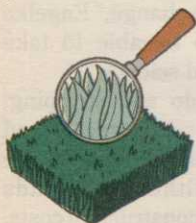
LAWRENCE, Kan. — Hall of Fame golfing legend Byron Nelson next Feb. 7 will receive the Old Tom Morris Award from the Golf Course Superintendents Association of America. Given in the memory of the Scottish greenkeeper and golf professional, the Morris Award recognizes individuals who have made outstanding lifetime contributions to the game. Nelson will be honored during the closing banquet of the 65th International Golf Course Conference and Show in Dallas.

**RHODY FIELD DAY READY**

KINGSTON, R.I. — The 62nd annual Turfgrass Field Day at the University of Rhode Island's Turfgrass Research Farm on Plains Road here will be held Aug. 18. Exhibits and sprayer calibration demonstrations will run from 8 a.m. to noon and, after a steak barbecue, tours will be given of research plots from 1:30 to 4 p.m.. More information is available from Dr. Noel Jackson at 401-792-2932, or Dr. Bridget Ruemmele at 401-792-2481.

**REGIONAL PESTICIDE REPORT COMPLETE**

LAWRENCE, Kan. — The 1993 Golf Course Superintendents Report, a new publication summarizing what treatments are effective against diseases and pests in various regions of the country, has been completed. The Center for Golf Course Management, the research arm of the Golf Course Superintendents Association of America, is making the report available for \$25. To order it, superintendents should write CGCM—Superintendents Report, 1421 Research Park Dr., P.O. Box 927, Lawrence, Kan. 66044-0927.



# Turfgrasses

## Researchers breed progress

By MARK LESLIE

Buffalograss and zoysiagrass have both surpassed even the optimistic forecast of an eminent turfgrass scientist who, three years ago, said they would be "the dominant warm-climate grasses of the next decade."

Dr. Milt Engelke of Texas A&M, who was involved in research on both varieties, predicted great things for them in August 1990.

"Over the next six to 10 years, perceptions about buffalograss will change dramatically," he said.

Asked, halfway toward that six-year point, if the two grasses were reaching expectations, Engelke said: "I think we're right on the money."

Buffalograsses have a jump on the zoysias, mainly because of the introduction of the new turf-type buffalograsses sooner than the introduction of the new zoysias, Engelke said.

"There probably is not another species — save maybe the zoysiagrasses — that has the latitude and flexibility and biological resiliencies of buffalograss," Engelke said.

"We have some zoysias that will be right in there with them, but not as good in winter-hardiness. Zoysia can't handle the compaction. Buffalograss is wonderful for compaction. It might not be an absolutely beautiful bright dark-green color. But there won't be a lot of holes in the ground either. You won't be playing in the mud."

### Water crises drive use of Buffalograss

Growing water crises in some areas, combined with an increasing demand and desire to use smaller amounts of chemicals, have made little-known buffalograss a marquee item in some areas.

"Sod growers in Colorado told me they could sell 200 acres [of buffalograss sod] right now if they had it," said Dr. Terry Riordan of the University of Nebraska.

Riordan, a key breeder of buffalograss, said improved varieties are "just starting to reach the market... There's been a big increase in [production] acreage throughout the South. About every cultivar of sod is sold out."

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Turfgrass growers "can't produce enough buffalograss," he said. The bulk of the production is still in Texas, but other growers are located in California, Arizona, New Mexico, Oklahoma, Colorado, Kansas, Alabama, all the way to the East Coast.

"In Texas alone, we are running a year behind what I had predicted," Engelke said. "This past year, the Highway Department has 'spiced' the use of over 5 million square yards of buffalograss for establishment and revegetation of highway rights-of-way."

"That is just now starting to snowball, and we're seeing other states doing the same thing."

Buffalograsses are being grown "in places I'd never have dreamed five years ago," Engelke said. "We released Prairie in 1989 marginally for home lawns, but primarily for rough areas for industrial parks, minimal-use areas. I'm finding them on municipal parks, sports fields, home lawns and in some municipal golf courses — even in the fairways."

In 1989 there was one turf-type buffalograss — Prairie. Four years later, there are 22 varieties — a mammoth increase in a short time, emphasizing people's perception of its prospects.

The national trials, Engelke said, show a number of grasses with "very high resiliency and elasticity to environmental conditions. That's really exciting — to know what we know biologically about these grasses."

He promised a lot of laboratory work will be done on both grasses.

### Zoysia pluses: hardiness and playability

Pests. Diseases. Drought. High humidity... None seem to faze zoysiagrass. And therein lies part, but not all, of its appeal to turfgrass breeders, golf course superintendents, and architects who specify grasses for new courses.

"There's a lot of diversity in zoysia germplasm. Some are very coarse and suitable for roughs. Some are very fine and suitable even for greens in some areas, like the lower South," said Kevin Morris, national director of the U.S. Department of Agriculture's National

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Buffalograss is perfect for Las Vegas-type climates, but four years ago when Greg Nash and Billy Casper designed this Palm Valley course, the advanced buffalograsses of today were not available.

## EPA compiles studies on pesticides in ground water

The Environmental Protection Agency has published a "Pesticides in Ground Water Database — A compilation of Monitoring Studies: 1971-1991," a summary and analysis of data concerning pesticides in ground water.

The report — divided into one national volume and 10 regional volumes corresponding to the EPA regions — is a collection of data from 153 ground water monitoring studies in 45 states conducted by federal, state and local governments,

universities, the pesticide industry and private institutions.

Monitoring data from more than 68,000 wells is reported. Pesticide residues were found in 16,606 wells (15,502 drinking water wells). A total of 117 parent pesticides and 16 pesticide degradates were found in at least one well. The 1992 report supersedes the "Pesticides in Ground Water Database; 1988 Interim Report."

The data indicates where ground water

has been sampled, where additional sampling might be necessary and where contamination occurs in relationship to the intensity of sampling. EPA said great care must be exercised when interpreting this data due to differences in sampling intensity, study design, and analytical methodology of monitoring studies that comprise the report.

EPA uses monitoring data as one tool to help identify pesticides that need additional

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# Buffalograss easy on water, chemicals and clippings, researchers say

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Of course, 1,000 or 2,000 acres is not a lot, but it's all sold and that's good."

"There's a lot of potential" for buffalograss, said Jim Snow, national director of the United States Golf Association Green Section.

The Green Section is helping fund Riordan's research because buffalograss requires far less water, pesticides and fertilizer than other warm-season grasses like Bermudagrass. All this is becoming more important.

"My guess is, it will probably be 'spiced' in a lot more golf courses," said Kevin Morris, national director of the U.S. Department of Agriculture's National Turfgrass Evaluation Program. "The drought situation in wide areas in California and the 1989 drought in the Midwest caused a lot of people to start scrutinizing turfgrasses and the irrigation of turfgrasses, looking for their water-conserving attributes."

Riordan agreed, saying: "I'm getting more and more calls from architects where they're 'specing' it or wanting to use it. Up until last year it wouldn't have been available in quantities that golf courses could have used it."

Buffalograss fulfills some hard demands. Compared to Bermudagrass, it:

- requires one-fourth to one-half the water;
- thrives on one-third the nitrogen (one to two pounds annually per 1,000 square

feet);

- is more disease- and insect-resistant and thus requires smaller amounts of pesticides, fungicides and herbicides;

- can be mowed as infrequently as once every two months as opposed to once a week;

- leaves fewer clippings;
- has slightly better shade tolerance;
- greens up earlier and goes dormant later in the season;

- tolerates cold better; and
- better resists soil compaction.

"It's going to be used initially in places where there's a need to use it," Riordan said. "If there's a water shortage or environmental issue, people may be forced to use this grass. If they're successful, others might say, 'I don't have to use this, but it would save some money and some water.' It could snowball."

Dr. Milt Engelke of Texas A&M, who performed a lot of initial research on buffalograsses before the baton was passed to Riordan, said it "fits very nicely" for public golf courses with low-maintenance budgets that play a lot of rounds.

"A tremendous amount of golf by the weekend hacker is played on that kind of course," he said. "We've been cutting buffalograss to 5/8 inch now and I'll put it up against a lot of grasses out there with the same maintenance level. I don't advocate replacing your Tifway Bermudagrasses in the South or bluegrass-ryegrasses up North. But perhaps 60

percent of the golf courses out there fall under the \$400,000-a-year budget for maintenance.

"Specifically we're only seeing the tip of the iceberg in the buffalograsses. I've seen some of Terry Riordan's stuff and other work that's being done on dwarf buffalograsses that are going to rival Bermudas. They are awesome. They look great. And [the research community] is only starting. They haven't had 30 years to work on this."

## RESEARCH AIMS

Buffalograss breeders are trying to improve turf quality while maintaining natural attributes.

"We'd like to make it a better-looking turf," Riordan said. "We'd like to extend its growing season, improve the color and increase its ability to withstand low mowing heights so it could be used on golf course fairways."

The University of Nebraska breeding program is probably within two or three years of producing material that will be in testing for those characteristics, he said.

"We're having good cooperation with sod growers involved with the Crenshaw & Doguet Turfgrass, Inc. of Austin, Texas," Riordan said. "As soon as we identify something that looks good, we have it on a sod farm the next year. If it looks good there, it's easy to increase it for additional testing and possibly put it into production."

Morris said cultivars that are currently available would add attractiveness in the rough areas. "When the grass gets pollen heads on it, it looks natural like a prairie and is attractive," he said.

Meanwhile, major work is being done to produce seeded varieties. Cooperating with Riordan are Native Turf Development Group and Sharp's Brothers Seed Co.

Quite different from other species, buffalograss has male and female plants. Female plants tend to be lower-growing and denser. Male plants have a pollen source (like a seed head) and tend to be less attractive — upright-growing and coarser textured.

The best turf quality generally comes from the female plants. But you must have both to produce a seeded cultivar.

Snow said that while vegetative types are normally higher-quality turfgrass, the goal "over the long haul" is to produce good seeded types, with more uniformity, to lower the cost of using buffalograss.

Until recently, all the cultivars had been found growing in the wild. The first generation of cultivars from the breeding programs are in the ground, and some are not in the national tests.

"We may have some that are as good as those in the test, or that would fit into certain niches," Riordan said. "But we're pretty fortunate with this first material. In nature, there was a lot of natural selection that went on for a long time that we couldn't duplicate in the lab."

# Zoysiagrass 'environmentally friendly'

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Turfgrass Evaluation Program. "Its strengths are its drought-tolerance and resistance to weed invasion.

"Also, it doesn't have many disease problems. Ryegrass fairways need fungicide through the growing season. But you would rarely have to use fungicide on zoysia."

Golf course architect Dr. Michael Hurdzan calls zoysia "the Cadillac of fairway grasses in the transition areas.

"It just so happens to be one of the most environmentally friendly grasses as well. But its playing quality is why we believe it's the best golf turf. With its good stiff growth, zoysia holds the ball up, so the average player, who tends to hit the ball thin, will hit it more in the clubface."

A Far East turf that was imported to the United States, zoysiagrass has peaked interest of people in the golf industry who see its potential in a range of areas from low-maintenance roughs to playing turf.

"It is potentially a big market," Morris said.

Jim Snow, national director of the United States Golf Association Green Section, has high hopes for the diverse zoysia.

"Quite a few courses have zoysiagrass fairways. Most are in the corridor between St. Louis and Washington, D.C., where warm-season grasses aren't hardy enough and cool-season grasses aren't heat-resistant enough," he said.

But Snow tempers his hopes with the thought that zoysia traditionally is slow to establish and most cultivars are vegetatively propagated.

"Buffalo and Bermudagrass are so fast to establish that people prefer them," Snow said. "Since zoysia is so slow, golf courses find it hard to justify renovating to zoysia... So we need zoysia that establish more quickly and that stay green, since they tend to lose their color in the transition zone."

Developing "a good seeded type" is cru-

cial to the golf industry, Snow said, and "that is going to be a slow progress."

But Dr. Milt Engelke, who is doing major research at Texas A&M, reports great progress in several areas, including nearly halving the establishment time of zoysia cultivars.

"We have accelerated our production time," he said, citing a crop-a-year mode which compares to 19- to 22-month growth period for old standby zoysia Meyer.

"We now have good recuperative ability from damage, divots, traffic or whatever. We have excellent growth characteristics, both for establishment and production," he said.

At the University of California-Riverside, Superintendent of Agricultural Operations Steve Cockerham said Dr. Victor Gibeault's El Toro zoysia is nearly as fast-growing as Bermudagrass.

On his test plots, Cockerham said, El Toro shows "very little thatch buildup but very stiff grass. We mow our plots at both 5/8 and 1-1/2 inches, and it looks good in either case."

Compared to Bermudagrass, Engelke said zoysia uses one-half to one-third less fertilizer, only two to three pounds of nitrogen per year compared to much more for Bermudagrass, and astonishingly less water.

"The only place I think I've shifted [his thinking from 1990] is when we look at the water requirements on the buffalograsses and zoysias," he said. "At one time I said we were probably using 30 to 40 percent less water than hybrid Bermudas for a comparable quality turf. Now I'd say we're 70 to 80 percent less."

Engelke said the top criteria for the DALZ cultivar lines he is working with are low water use, very high persistence (competitive ability), very low maintenance levels, and quality of surface.

"I've seen them go 45 to 60 days without

irrigation and hold their color," he said.

Engelke agreed with Snow that a high-quality, seeded-type zoysia is in the future.

"We are going to be limited to coarse types, for one simple biological reason: Those species have a very small seed head," he said. "The problem with seeded types is that there is not enough pressure to make them uniform. The TGS [Turfgrass Germplasm Services] lines by [president and chief scientist] Jack Murray have done a very good job in that direction."

While saying "the downside to zoysia is that it comes in slowly," Hurdzan added: "That can be viewed as a positive because it's a great accent grass. We're using it at Cook's Creek Golf Club [outside Columbus, Ohio] on the steep banks and bunker faces to reduce maintenance and to give the golfer a new experience."

## FICKLE MARKETPLACE

The marketplace, Engelke said, is "real fickle."

He cited El Toro as "under-used."

He said he expects to see more zoysia sod in the marketplace as more developers decide the expense of solid-sodding is worth it.

"People say they can't afford it. But, more and more that's going to change," Engelke said. "We're going to be able to take advantage of some good science."

"We have tried to do sod stripping, sprigging and sodding," said Hurdzan, "and there's no question that sodding is the preferred method, although it adds \$250,000 to \$350,000 to construction costs. But it's justified. It's a matter of setting your priorities and looking in the long run. You'll be open quicker. You're not going to have the costs of erosions, delayed openings and repairs. And you're giving the golfer a finished product."

"It's probably a very good value to sod zoysia."

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