Bluegrass on comeback trail, turf breeders say

ELTSVILLE, Md. — Bluegrass, out of fashion since perennial ryegrasses broke onto the scene, may be on the road to a comeback in golf course circles. Turfgrass breeders are conquering the obstacles of lower height of cut and density, and are hoping to improve seed yield and heat tolerance.

"We've opened the door for closecut bluegrasses," said Dr. Doug Brede, research director at Jacklin Seed Co. "In fact, I think we've started a whole phenomena... It opens up a totally different option for people. On a scale of 10, I'd give it an 8 on an order of earth-shattering if I were a superinten-

"Where superintendents have had the difficult choice of a ryegrass fairway which does not have the ability to spread and repair divots, or bentgrass fairways with much higher maintenance costs, bluegrasses will become a much more considered choice," said Dr. Virginia Lehman, director of research at the Lofts Seed Co. research farm in Lebanon, Ore.

"People used to use Kentucky bluegrass on fairways almost exclusively, partially because

there were not a lot of options," said Kevin Morris, national director of the National Turfgrass Evaluation Program (NTEP), headquartered here. "They worked pretty well except that summer patch and necrotic ring spot started to become a problem and we had no control for them. When the perennial ryes came along, and were easy to seed and looked nice, people started to use them exclusively. But, since then, we've found that rye is not perfect, either."

"You can blow out a lot of ryegrass with winter kill," said Dave Oatis, director of the U.S. Golf Association Green Section's Northeast Region. Ryegrasses also suffer from poor divot recovery, attacks of snow mold, brown patch and red thread. And now gray leafspot has emerged as a devastating

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Buffalograss breeders hoping for supers' change in attitude

PHOENIX, Ariz. - Hailed a few years ago as a solution to water restrictions and chemical applications, buffalograss

has instead drawn more attraction as an "accent" grass on golf courses. Yet turf breeders remain optimistic about the future of buffalograss on golf courses.

A native grass on prairies, buffalograsses are known for droughthardiness, low fertility requirements, disease- and insect-resistance, heat- and coldtolerance and other attributes. They require only one-fourth to one-half the water needed for Bermudagrass, so with growing concern about water availability, research on buffaloes has drawn widespread attention. They re-emerged in a handful of research programs just a dozen years ago - a New York minute in the time clock of turf breeders.

"We're looking at this as developing a grass for the next century," said Dr. Terry Riordan of the University of Nebraska, a key breeder of buffaloes. "We're only in our 12th year, but the new varieties we

have are much better than we've had in the past."

Riordan touted the density, color and uniformity of the newer buffalograsses and said two Northern types that can tolerate mowing down to 5/8 inch should be available next year.

Nevertheless, buffalograss hasn't been without its critics among those who have tried it in the field. The main negative is that stands of buffalograss may be invaded by the more aggressive Bermuda-

Golf course architect Ken Dye of Houston, who has specified buffalograss on a couple of courses, said: "We don't do it anymore. Our overall experience has been mediocre. The newer varieties are definitely better... But the experience we've had is that contamination over time is significant. Within five or 10 years, 10 to 20 feet of your buffalograss rough is taken over by Bermudagrass that has spread from the fairway.

"So until someone figures how to make stronger buffalograss, or a chemical to keep out Bermuda, I can't see putting the two

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National Kentucky bluegrass test progress report for medium-high input

Name	AB1	IA1	IA2	IL1	IL2	IN1	KS1	KY1	MA1	MD1	ME1	MI1	MN	1 MO	1 M)3	NC1	NE1	NJI	NJ2	ОН1	OK1	ONI	PA1	QE1	RII	UB1	UTI	VA1	WA1	Mean
*Midnight	6.3	6.5	5.7	6.6	6.5	6.3	7.0	7.5	6.0	5.0	6.7	6.4	6.1	4.4	7.0	5.8	6.3	6.7	7.2	8.0	6.5	5.5	6.3	7.8	6.3	6.8	5.8	4.4	6.7	6.3
*ZPS-2572	6.7	7.3	6.1	7.2	6.4	5.4	6.8	7.3	6.1	5.7	6.4	6.3	6.2	4.5	7.2	6.3	6.5	5.2	6.8	7.6	6.5	4.9	6.3	7.4	6.3	6.9	5.5	4.2	5.8	6.3
*Unique	7.0	6.8	6.8	6.2	5.9	6.1	5.8	7.4	6.3	5.7	6.5	6.4	6.7	5.0	6.7	5.4	6.5	5.3	5.3	7.8	6.9	5.1	6.6	7.6	5.3	5.8	6.8	5.9	6.0	6.3
*Total Eclipse	6.0	6.2	6.4	7.3	5.3	5.5	6.7	8.0	6.3	5.2	6.6	6.0	6.0	4.1	7.2	5.4	6.3	5.1	7.3	7.3	6.2	4.5	6.7	7.8	6.6	7.3	6.2	4.1	6.4	6.2
*Award	7.0	7.1	6.0	6.9	5.3	5.5	6.4	7.3	5.5	5.8	6.4	6.6	5.8	4.4	7.0	5.6	6.2	4.5	6.9	8.0	6.5	4.7	7.2	7.2	7.0	6.3	5.9	4.5	6.5	6.2
PST-B2-42	7.0	7.2	6.4	6.7	6.3	6.5	6.3	7.3	6.0	4.8	6.6	7.1	6.0	4.5	6.3	6.0	7.0	4.5	5.3	7.9	5.9	5.1	6.0	7.8	5.7	6.0	6.6	5.2	6.0	6.2
PST-B0-141	5.7	6.7	7.0	7.3	6.7	6.0	6.1	7.1	6.7	5.7	6.4	6.2	6.0	4.3	6.3	6.5	6.5	4.4	5.4	8.0	6.4	4.8	6.2	7.9	6.0	5.3	6.7	5.8	5.8	6.2
*Blacksburg	6.7	7.3	6.9	6.3	6.2	6.2	6.7	6.0	5.5	6.0	6.4	6.5	6.2	5.6	6.5	5.4	5.5	4.9	5.4	8.0	5.8	5.2	7.8	7.8	6.2	5.5	6.3	5.1	5.9	6.2
Absolute	7.0	6.9	5.9	7.3	5.3	6.1	5.7	6.6	5.1	5.8	6.4	6.7	6.2	5.0	7.0	5.7	5.5	5.0	5.8	7.9	6.4	5.5	7.2	7.8	6.1	6.4	6.2	4.4	6.4	6.2
*Odyssey	7.0	5.7	6.8	7.4	5.2	5.6	6.3	7.2	5.9	5.4	6.7	6.6	5.4	3.9	6.9		5.3	4.8	6.8	8.1	6.8	5.4	6.5	7.4	6.2	6.8	6.0	4.8	5.7	6.2
*Nuglade	6.3	6.0	6.6	6.5	5.3	5.3	6.4	7.3	6.3	5.5	6.8	6.1	5.7	4.5	6.9	5.8	5.3	4.5	6.7	8.1	7.3	4.9	6.8	7.3	6.5	7.0	5.8	4.0	6.8	6.1
*Quantum Leap	6.7	6.3	5.7	6.8	5.7	5.3	6.4	7.5	5.5	5.3	6.0	6.3	5.8	4.8	6.4	5.7	6.8	4.8	7.1	7.7	5.9	5.3	7.0	7.5	6.6	7.0	5.3	4.7	6.3	6.1
*America	5.3	5.7	6.5	6.9	6.5	6.5	5.8	7.0	6.3	5.7	7.0	6.3	6.0	4.4	6.4	5.8	7.0	5.6	5.3	7.7	5.9	4.7	6.2	7.3	6.3	5.7	6.7	5.7	5.8	6.1
*Rugby II	7.0	5.6	6.3	7.0	5.3	5.6	6.2	7.0	5.8	5.4	6.2	6.7	6.0	4.2	6.9	5.3	6.0	5.1	6.5	7.6	6.5	5.0	6.7	7.3	6.5	6.3	5.9	5.0	6.6	6.1
J-1576	6.0		5.7			5.2			59	54		6.3		44	6.5	5.9	6.0	47	6.7	7.5	70	4.8	-	7.6	6.8	71	59	4.7	6.6	6.1
PST-B3-180	6.0		6.2		-			7.2		-	5.8	6.0		4.7	6.3	6.0			5.3	8.1	6.4	5.3	6.1	7.4	6.5	5.7	6.6	5.1	6.2	6.1
PST-638	6.3	-	6.0									6.7		4.4	6.7					7.3	6.1	4.8	57	7.6	6.6	5.6	5.1	4.7	5.8	6.1

1.3 1.6 1.1 0.7 1.2 0.8 0.9 0.9 0.9 0.9 1.6 0.6 0.6 1.0 0.5 1.0 1.0 0.9 1.0 0.7 0.9 0.9 1.0 0.5 0.8 1.1 0.8 1.0 0.6

Commercially available in the United States in 1997.

SEED FIRMS WITH TOP ENTRIES

Midnight — Standard Entry ZPS-2572 — Zajac Performance Seeds

Unique — Turf-Seed Total Eclipse - Jacklin Seed Award — Jacklin Seed PST-B2-42 — Pure-Seed Testing PST-B0-141 — Pure-Seed Testing Blacksburg — Turf-Seed Absolute — Medalist America Odyssey — Peterson Seed

Nuglade — Jacklin Seed

Quantum Leap — Roberts Seed America — Pickseed West Rugby II - Medalist America

J-1576 — Jacklin Seed PST-B3-180 - Olsen-Fennel Seed

PST-638 - C.R. Funk, Rutgers Uni-

The following are conditions at the sites of the bluegrass national tests, including, in order, location, soil texture, soil pH, nitrogen applied (in pounds per 1,000 square feet), mowing height (in inches) and irrigation practical in the square feet).

AB1 — Olds, Alberta, Canada, N/A, N/A, 2.1-3.0, 0.5-1.0, N/A. **IA1** — Ames, lowa, sandy clay loam, 7.1-7.5, 2.1-3.0, 2.6-3.0, to prevent stress. **IA2** — Ames, lowa (traffic), sandy clay loam, 7.1-7.5, 2.1-3.0, 2.6-3.0, to prevent stress. - Urbana, Ill., silt loam and silt, 6.1-6.5,

3.1-4.0, 1.1-1.5, to prevent stress.

IL2 — Carbondale, III., silty clay loam, 6.1-6.5, 4.1-5.0, 1.1-1.5, to prevent stress.

IN1 — West Lafayette, Ind., silt loam and silt,

1-7.5, 3.1-4.0, 0.6-1.0, to prevent stress **KS1** — Manhattan, Kan., silt loam and silt, 6.6-7.0, 3.1-4.0, 0.0-0.5, to prevent stress. **KY1** — Lexington, Ky., silt loam and silt, 6.1-6.5, 3.1-4.0, 1.1-1.5, only during severe MA1 — Amherst, Mass., silt loam and silt, 6.1-6.5, 5.1-6.0, 0.0-0.5, to prevent stress. MD1 — Silver Spring, Md. (dense shade), loamy sand, 4.6-5.5, 2.1-3.0, 2.1-2.5, to

prevent stress.

MD2 — Silver Spring, Md. (shade), silt loam and silt, 6.6-7.0, 2.1-3.0, 2.6-3.0, to prevent dormancy.

ME1 — Orono, Maine, N/A, 5.6-6.0, 5.1-6.0, 1.1-1.5, to prevent stress.

MI1 — East Lansing, Mich., sandy loam, 7.1-7.5, 2.1-3.0, 2.6-3.0, to prevent stress.

MN1 — St. Paul, Minn., silty clay loam, 7.1-7.5, 2.1-3.0, 1.6-2.0, to prevent stress.

MO1 — Columbia, Mo., silty clay loam, 6.1-6.5, 3.1-4.0, 1.1-1.5, to prevent stress.

MO3 — St. Louis, Mo., silty clay loam, 6.6-7.0, 4.1-5.0, 2.6-3.0, to prevent dormancy. NC1 — Raleigh, N.C., sandy clay loam, 5.6-6.0, 2.1-3.0, 1.1-1.5, to prevent stress.

NE1 — Lincoln, Neb., N/A, N/A, 3.1-4.0,

0.0-0.5, to prevent stress.

NJ1 — North Brunswick, N.J., sandy loam, 6.1-6.5, 3.1-4.0, 1.1-1.5, to prevent stress.

NJ2 — Adelphia, N.J., sandy loam, 6.1-6.5, 5.1-6.0, 1.1-1.5, to prevent stress.

OH1 — Columbus, Ohio, silt loam and silt, 6.6-7.0, 2.1-3.0, 2.1-2.5, to prevent stress.

OK1 — Stillwater, Okla., silty clay loam, 6.6-7.0, 3.1-4.0, 1.6-2.0, to prevent stress.

ON1 — Guelph, Ontario, Canada, Sandy Loam, 7.6-8.5, 3.1-4.0, 2.1-2.5 no irrigation.

PA1 — University Park, Pa., silt loam and silt, 6.6-7.0, 3.1-4.0, 1.6-2.0, to prevent stress.

QE1 — Quebec, Quebec, Canada, N/A, N/A. 3.1-4.0, 0.6-1.0, N/A.

A, 3.1-4.0, 0.6-1.0, N/A

R11 — Kingston, R.I., silt loam and silt, 6.6-7.0, 3.1-4.0, 1.1-1.5, to prevent stress.

UB1 — Beltsville, Md. (high maintenance), silt loam and silt, 5.6-6.0, 3.1-4.0, 0.6-1.0, to

UT1 — Logan, Utah, silt loam and silt, 7.1-7.5, 4.1-5.0, 0.6-1.0, to prevent stress.

VA1 — Blacksburg, Va., N/A, N/A, 3.1-

4.0, 1.1-1.5, N/A.

WA1 — Pullman, Wash., silt loam and silt,
5.6-6.0, 5.1-6.0, 1.6-2.0, to prevent stress.

Bluegrass comeback

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fungi on ryegrass. Add to this, sharp price increases for ryegrass the last two years.

From his test trials, Prof. Bill Torello of the University of Massachusetts is reportedly "sold on moving back to bluegrasses with new types of bluegrasses," said Brede following a field day.

The older-type bluegrasses, when cut short, "got diseases you just wouldn't believe," said Brede. "They would increase a thousandfold with disease... The new types, when cut close, respond just as they do when they're taller, with nearly perfect disease resistance.

"We couldn't even suggest this [fairway use] if they didn't have that resistance at this low cut."

Agreeing to the claims of lower-cut bluegrasses, Morris said: "It used to be that people would not recommend less than 3/4-inch mowing height for Kentucky bluegrass, and not many would tolerate that height. Now there are a number that can be mowed at 1/2 inch, which puts them in the fairway category. And you'd be surprised at the density of some of these."

But Lehman cautioned: "Industrywide, there are promising new varieties that tolerate low mowing heights, especially relative to fairways. Underline 'promising.' We're trying to make great strides, but progress is much slower in blues because of their reproductive behavior: They are apomixis, meaning that every seed has the same maternal constitution except in rare deliberate crosses."

At Lofts, researchers are excited about progress with varieties that will take low mowing heights and are very dense and aggressive. "Hopefully, with good seed yields, we can make it more readily available," Dr. Lehman said. "We have limited release this year, and will have more material next year.

"With bluegrasses, there is also an emphasis toward more heat-tolerance as well as disease-resistance ... and we are working on winter-fall color retention versus early-spring green-up—two traits that may not be the same in a variety."

"I see greater strides ahead," Jacklin's Brede said. "But the varieties coming out this summer are great. I think these ones people could jump in with and have very successful close-cut fairways."

How far south can these bluegrasses be grown?

"Practically, bluegrass fairways are suitable down to the Mason-Dixon line," Brede said. "They could be used in mixtures with perennial rye a couple hundred miles south of that. I see a natural match in that warmer zone. Ryes are susceptible to

BLUEGRASS, BUFFALO UPDATE

gray leaf spot in that region, so it's knocking them all out and it's expensive to treat chemically. But bluegrass has good immunity for it [gray leaf spot]."

"I've had more and more calls about mixing the two," said NTEP's Morris.

So, what are the negatives to the new breed of blues? Researchers agree that since it is a small seeded grass it is more difficult to get established than a ryegrass. And time may be a factor as many superintendents will wait for university researchers to show the way with real-life results, positive or negative.

As Dave Oatis said from his Northeast Region headquarters: "People are speculating about using newer [bluegrass] cultivars on fairways. In the Great Plains and Colorado it's a viable choice. But in this climate, I wouldn't be a guinea pig at this point."

NTEP TRIALS TO YIELD MORE SPECIFIC FINDINGS

BELTSVILLE, Md. — The National Turfgrass Evaluation Program (NTEP) has upgraded its bluegrass trials by garnering more specific test results. "Initially, we grouped the locations by different mowing heights and nitrogen levels to have a balanced level of each," said NTEP National Director Kevin Morris. "We then separated mowing heights and analyzed those together. Then the nitrogen levels were grouped and we ran those. We also attempted to group the locations by geographic region and ran the analysis. This is not perfect, but it's a start," he added. "Hopefully it will help people pick out cultivars that will perform well under different conditions and in different regions." This type of categorization will be done on the new tests with other species as well, he said.

