

# New bentgrasses stir superlatives from breeders

By MARK LESLIE

Are the new bentgrasses coming to market this year almost too good to be true? Plant breeders who have discovered the germplasm, developed it, and nurtured it through the development process, believe so. Yet, they think even greater heights can be reached.

"I'm very excited," said Lofts Seed Director of Research Dr. Rich Hurley, whose new L-93 along with Crenshaw and Southshore bentgrass varieties all placed in the top 10 in the U.S. Department of Agriculture's National Turfgrass Evaluation Program (NTEP) results, released in June.

"I continue to be real optimistic about the direction things are going," said Dr. Milt Engelke of Texas A&M University. "The industry has got some really good choices now. Some of the new varieties are much stronger from a biological standpoint, and have stronger genetics. And I don't think that's going to stop. We will continue to add more and more physiological characteristics. We will start stacking them. We may find certain grasses that rise to the top for certain areas. They may be more niche-type grasses."

"We are starting to locate grasses with Multiple Physiological Characters, what I call MPCs. We want to bring together the heat tolerance, seed-production capability, high qualities, disease- and insect-resistance. We have identified the genetics for these. We are seeing this with new germplasms and genetics."

The new bentgrass cultivars, by and large, are superior in density and featuring habits more upright for a truer putting quality, said Dr. Joe Duich, who has four cultivars in the NTEP top 10 and whose Penncross, Pennlinks and Penneagle varieties have been the industry standard-bearers for 30 years.

"These newer generations of bentgrasses require different management," said Seed Research of Oregon Technical Agronomist Skip Lynch. "They are bred to be less maintenance-intensive — less water, less pesticides, less mechanical manipulation of the grass."

Once dominated by Tee-2-Green and Penn State University research, the field of bentgrass research is wider now. Seed Research's SR1020 and Providence bentgrasses "stuck a crowbar in the market and opened it up" in 1987, Lynch said. "Now 11 seed companies, plus two universities, are entering [NTEP]... We have 28 [bentgrass] entries just for greens. A few years back, less than a half dozen were available — creepers or otherwise."

Turf Merchants Inc. Vice President Steve Tubbs added: "The top 10 or 12 varieties didn't even exist five years ago."

"We've taken a cool-season grass and moved its areas of use 100 to 150 miles south of where it was 20 years ago," said Hurley. "If you could comfortably grow bents in the mid-portion of the transition zone, now you can grow them in the southern part of the transition zone and maybe a little farther south. But you still can't grow them in Florida, where the [summer] season is so long. Certainly, there are better bents for central Georgia, Alabama, Mississippi and Texas."

Engelke even points to success just north of Houston, where a golf course still reports "gorgeous" bentgrass greens four years after opening. "The bent is doing fantastically well and that is a very humid environment," Engelke said.

So what happens to the Penn series of grasses that have dominated the golf industry for years?

"If somebody could see Penncross with any of the new material, I think they would be shocked," Hurley said. "There is no reason to use Penncross for putting greens. It makes no sense at all. People say they like Penncross for its aggressiveness. But all the top eight or so are more aggressive than Penncross. Penncross is prone to spike marks, it's open and coarse, it's grainy. It doesn't have as good heat tolerance as other varieties. But yet a lot of people would dispute me and challenge me."

Added Lynch: "As the newer varieties come out and show better disease resistance, why plant something you know in advance is going to cause a headache?"

"We won't be putting Penncross on greens anymore," Engelke said flatly. "You have much better choices to work with."

Duich himself is excited by the improvements in the new grasses, while putting turfgrass maintenance in perspective. "Some of the best greens I've ever seen are Penncross. And some of the worst are Penncross. A lot depends on soil conditions and management."

While Duich's PSU A-4, A-1, G-6 and G-2

Continued on next page

# Buyers are guinea pigs no longer

By MARK LESLIE

As people in the golf industry become accustomed to giant advances in turfgrasses, they are increasingly apt to take the plunge and buy them, according to experts in the seed world. That may not be as true with golf course architects as it is with superintendents.

While people are usually most reluctant to buy new bentgrasses, especially on putting greens, according to Dr. Joe Duich, characteristically conservative superintendents are reportedly acting as pioneers for newly unveiled grasses.

"Absolutely," responded Turf Merchants Inc. Vice President Steve Tubbs when asked if people are ready to take the leap.

The idea of superintendents holding back from purchasing new grasses is "changing and changing radically," agreed Skip Lynch, technical agronomist with Seed Research of Oregon. "[Reluctance] is not nearly as predominant as it was, say, three years ago. I see guys running out to buy new varieties they have never seen before, simply because they want to see something new."

"Sometimes you find yourself on the other side of the argument, asking, 'Where has it been used?' I encourage new grasses, but don't make that huge leap of faith without having at least seen the material first."

Concerning course architects, Dr. Rich Hurley of Lofts Seed said: "Many are reluctant to use newer varieties. They don't want to be a guinea pig, they say. But they're not. The parent material [for new varieties] came off golf courses."

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# National Bentgrass Putting Green Test 1st-year Results

Name	AZ1	GA1	GA2	IA1	IL1	IL2	KS1	KY1	KY2	MA1	MI1	MN1	MO1	MO2	NH1	NJ1	OK1	PA1	RI1	SC1	TX1	VA1	WA1	WA3	WI1	WI2	Mean
*A-4	7.2	4.0	2.1	6.7	5.5	7.1	6.9	7.7	7.6	6.1	6.0	7.8	7.3	7.3	6.7	6.0	6.6	6.6	6.1	5.2	7.1	6.6	6.7	6.3	7.4	7.8	6.5
*L-93	6.6	4.3	1.9	6.6	5.3	6.3	6.9	8.0	7.4	7.5	6.3	7.3	6.9	6.9	5.9	7.3	6.4	7.4	6.2	5.1	6.4	6.1	6.2	5.7	7.2	7.3	6.4
*Providence	6.2	4.2	2.4	6.5	5.9	6.5	6.9	7.4	7.5	7.3	5.8	6.9	7.6	7.5	7.1	6.2	5.9	6.8	6.0	4.3	7.1	6.0	6.4	5.8	7.3	7.2	6.3
*A-1	6.1	3.9	2.2	6.1	5.3	5.7	6.0	8.1	7.4	7.3	5.2	7.4	6.6	7.2	5.2	7.2	6.3	7.3	5.8	5.6	6.7	6.4	6.5	6.2	7.6	7.4	6.3
*Crenshaw	6.4	3.9	2.3	5.8	5.5	6.7	7.5	7.2	7.4	7.0	5.8	6.9	6.9	7.4	6.2	6.5	6.1	6.1	5.9	5.0	7.1	6.2	6.7	4.9	6.9	7.1	6.2
*Cato	7.3	4.1	2.0	6.6	5.1	5.3	6.7	8.0	6.8	7.4	5.8	7.2	7.0	7.0	6.7	5.7	6.0	6.8	6.5	5.0	6.0	6.1	6.0	6.0	7.1	7.3	6.2
*G-6	6.2	4.1	2.2	6.3	4.8	5.5	5.3	7.7	6.8	7.5	5.5	7.5	6.3	7.0	6.4	6.6	6.7	6.5	5.8	5.1	6.3	6.2	6.1	6.0	7.3	7.3	6.1
*G-2	6.2	3.9	2.1	5.4	4.9	5.7	5.4	7.8	7.1	6.5	5.8	7.8	6.9	7.2	5.9	6.8	6.1	6.7	6.1	5.1	5.9	6.1	6.5	5.9	7.2	7.5	6.1
*Southshore	6.0	4.5	1.9	6.2	4.9	6.5	6.6	7.1	6.5	6.1	5.5	7.5	7.1	7.2	6.4	5.9	5.7	6.7	6.2	5.1	6.8	5.8	6.3	5.5	7.2	6.6	6.1
SYN 92-1	6.1	3.9	2.2	5.8	5.1	6.5	7.0	7.1	7.3	6.6	5.2	7.4	7.1	7.3	5.3	5.8	5.9	6.1	5.9	4.4	6.5	6.1	6.1	6.2	7.0	6.8	6.0
SYN 92-5	5.7	3.9	1.9	5.8	5.1	7.1	5.6	7.1	6.6	6.4	5.5	6.5	6.8	7.1	5.1	6.2	5.9	6.3	5.4	4.4	6.9	6.5	6.5	6.4	7.1	7.2	6.0
SYN 92-2	5.7	4.4	2.3	5.3	4.5	7.3	6.5	6.7	7.2	6.0	5.3	7.3	6.9	7.1	5.8	6.0	5.5	5.7	5.7	4.4	6.5	6.3	5.9	5.7	6.8	6.8	5.9
*SR 1020	5.9	4.3	2.4	5.6	4.8	5.7	6.1	7.1	6.8	5.9	5.5	7.1	6.8	7.0	6.4	5.1	5.8	5.8	6.1	4.6	7.2	5.6	6.3	5.5	7.0	6.9	5.9
*Pennlinks	5.0	4.3	2.5	5.5	5.0	6.4	6.5	7.7	6.5	5.8	5.2	6.8	7.3	7.4	6.0	5.4	5.3	6.2	5.3	4.7	6.1	5.5	6.3	5.2	6.8	7.0	5.8
*Regent	5.4	4.3	1.8	5.7	4.7	6.0	6.5	7.1	6.7	6.2	5.2	7.0	6.8	7.3	6.2	5.8	5.4	5.6	5.4	4.3	7.2	5.4	6.1	5.2	7.1	6.4	5.8
BAR WS 42101	5.9	3.9	1.7	5.3	4.6	5.5	6.5	7.4	7.2	5.7	5.3	7.4	6.8	7.0	5.9	4.8	5.5	6.8	5.6	3.9	6.0	5.9	6.4	5.5	7.1	7.3	5.8
MSUEB	4.8	4.1	2.2	5.4	4.7	6.7	6.0	7.2	7.2	5.6	5.2	6.6	7.5	7.2	5.3	5.8	5.3	6.3	5.2	5.0	5.7	5.3	6.1	4.7	6.9	6.7	5.7
ISI-AP-89150	5.0	3.9	1.7	5.5	4.8	5.0	5.9	7.3	6.1	6.6	5.2	7.2	7.2	7.2	5.6	5.3	5.3	6.3	5.2	4.0	6.5	5.5	6.5	5.7	7.1	6.5	5.7
*18th Green	5.4	3.7	1.7	5.2	4.1	4.7	5.5	6.8	7.1	6.3	5.3	7.5	7.1	7.3	7.2	5.2	5.7	5.9	4.9	4.0	6.1	5.9	6.0	4.9	6.5	7.0	5.7
*Lopez	4.8	3.9	3.2	5.5	4.3	6.3	5.9	7.7	6.0	6.1	5.2	6.8	7.2	7.1	5.6	5.8	5.1	5.6	5.2	3.4	6.4	5.4	6.1	4.8	6.8	6.7	5.6
*Pro/Cup	5.0	4.1	1.7	4.8	4.5	5.1	6.6	7.3	7.2	5.7	4.8	6.7	6.6	7.1	6.0	5.8	5.3	5.5	5.6	3.6	6.5	5.5	6.1	5.3	6.8	6.6	5.6
DG-P	5.0	3.9	1.8	4.7	4.2	5.7	5.7	7.5	6.0	6.1	5.2	7.0	6.9	7.1	5.8	5.3	5.3	6.2	4.9	3.8	6.5	5.3	5.6	5.2	7.0	6.6	5.6
*Penncross	4.9	4.3	2.7	5.3	4.7	6.1	5.9	7.0	7.3	5.2	5.2	6.8	7.0	7.1	6.2	4.7	4.9	5.3	4.8	3.5	7.0	5.2	6.2	4.8	6.2	6.1	5.5
*Trueline	4.8	3.8	2.2	5.2	4.3	4.0	6.4	7.3	6.9	5.5	4.3	7.0	7.4	7.1	6.3	5.9	5.1	5.4	5.6	3.4	6.1	5.4	6.0	4.8	7.1	6.6	5.5
*SYN-1-88	4.8	4.6	2.0	4.3	4.8	5.1	5.9	7.1	6.7	4.9	4.7	6.8	6.7	7.1	5.0	5.3	5.3	4.5	4.8	3.8	6.5	5.3	6.0	4.5	6.6	6.3	5.4
*Tendenz	2.5	3.9	4.4	3.4	3.3	5.3	4.3	5.8	5.1	5.0	4.2	6.5	6.3	6.8	5.9	4.2	3.7	5.1	3.8	3.1	6.1	5.7	5.1	4.4	5.9	5.8	4.8
BAR AS 492	2.4	4.8	5.2	3.6	3.1	4.1	5.6	4.6	4.6	3.8	3.5	6.3	6.0	7.0	2.7	3.6	3.6	4.5	5.0	2.5	5.2	5.1	4.5	4.2	6.8	6.5	4.6
*Seaside	3.7	4.3	3.3	3.5	3.9	3.9	4.9	6.3	5.8	3.8	4.0	6.4	6.0	7.0	3.6	3.0	4.0	3.3	4.8	2.8	6.3	3.8	5.1	3.1	5.6	5.6	4.5
LSD Value	0.7	0.7	0.7	0.9	0.6	1.8	1.4	0.5	0.6	0.9	0.8	0.8	0.7	0.6	0.4	0.6	0.4	0.7	0.9	0.8	1.2	0.5	0.6	0.4	0.5	0.5	0.2

\* — Commercially available in the United States in 1995.

## Blending cultivars the answer for some

By MARK LESLIE

Turfgrass blends. For some golf course superintendents, they are the answer to the equation as to the best turfgrass to buy.

Providence and SR 1020 equal dominant. Cato and Crenshaw equal CNC.

The idea is simple. Seed your favorite grass along with another that has characteristics lacking in your favored turf. For instance, Crenshaw is susceptible to dollar spot. Cato is not. Mixing the two results in an excellent blend.

The demand certainly exists. "I get 20 calls a week for Crenshaw and Cato, and I don't even sell it," said Steve Tubbs, vice president of Turf Merchants Inc. "I know there is demand that is not being met. [Blends] are real and they are making their mark, especially under the banner of being heat-tolerant."

With a rash of new, high-quality grasses entering the marketplace this fall, more possibilities exist for blends. The most pro-

nounced appears to be Lofts' Crenshaw and L-93. Pickseed West owns Cato, making the Crenshaw-Cato mix a bit of a problem. The appearance of L-93 as a top-rated cultivar solves that problem.

Indeed, Lofts research director Dr. Rich Hurley said: "We'd actually like a three-way blend: L-93, Crenshaw and Southshore. Crenshaw-Southshore has been popular."

Dr. Milt Engelke of Texas A&M University added that superintendents can take advantage of some of the aggressive new grasses "that tend to thatch but have tremendous traffic tolerance... If the course will run only 10,000 to 20,000 rounds, they need a light Crenshaw in the blend or to do heavy verticutting. If a super understands a grass's strengths and weaknesses and manages toward them, the management doesn't have to preclude its use. PSU A1 and A4 and the PSU G2 and G6 produce heavy thatch. But you can manage for that."

The following are conditions at the sites of the bentgrass 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 practiced:

- AZ1 — Tucson, Ariz., sand, 7.6-8.5, 3.1-4.0, 0.1575, to prevent stress.
- CO1 — Fort Collins, Colo., sandm, 7.1-7.5, 4.1-5.0, 0.0-0.5, to prevent stress.
- GA1 — Griffin, Ga. (high soil pH), sandy clay loam, 5.6-6.0, 2.1-3.0, 0.6, to prevent stress.
- GA2 — Griffin, Ga. (low soil pH), sandy clay loam, 3.6-4.5, 2.1-3.0, 1.0, no irrigation.
- IA1 — Ames, Iowa, silty clay loam, 7.1-7.5, 3.1-4.0, 0.5, to prevent stress.
- IL1 — Urbana, Ill., silt loam and silt, N/A, 2.1-3.0, 0.0-0.5, to prevent stress.
- IL2 — Carbondale, Ill., silty clay loam, 6.1-6.5, 3.1-4.0, 0.0-0.5, to prevent stress.
- KS1 — Manhattan, Kan., sand, 7.6-8.5, 3.1-4.0, 0.1562, to prevent stress.
- KY1 — Lexington, Ky., sand, N/A, 4.1-5.0, 0.1875, to prevent stress.
- KY2 — Lexington (Griffin Gate GC), sand, N/A, 4.1-5.0, 0.1875, to prevent stress.
- MA1 — Amherst, Mass., sandy loam, 6.1-6.5, 3.1-4.0, 0.0-0.5, to prevent stress.
- MI1 — East Lansing, Mich., loamy sand, 6.6-7.0, 8.1+, 0.1875, to prevent stress.
- MN1 — St. Paul, Minn., silty clay loam, 7.5, 2.1-3.0, 0.0-0.5, to prevent stress.
- MO1 — Columbia (traffic), Mo., sand, 7.1-7.5, 5.1-6.0, 0.1562, to prevent stress.
- MO2 — Columbia, Mo., (no traffic), silt loam and silt, 6.1-6.5, 1.1-2.0, 0.1562, to prevent stress.
- NH1 — Durham, N.H., sandy loam, 5.6-6.0, 3.1-4.0, 0.0-0.5, to prevent stress.
- NJ1 — North Brunswick, N.J., sandy loam, 6.1-6.5, 4.1-5.0, 0.25, to prevent stress.
- OK1 — Stillwater, Okla., sand, 7.1-7.5, 4.1-5.0, 0.1875, to prevent stress.
- PA1 — University Park, Pa., loamy sand, 6.1-6.5, 2.1-3.0, 0.0-0.5, to prevent stress.
- RI1 — Kingston, R.I., silt loam and silt, 6.6-7.0, 4.1-5.0, 0.1875, to prevent stress.
- SC1 — Florence, S.C., sandy loam, 6.1-6.5, 5.1-6.0, 0.25, to prevent stress.
- TX1 — Dallas, Texas, loamy sand, 6.1-6.5, 7.1-8.0, 0.15-0.25, to prevent stress.
- VA1 — Blacksburg, Va., sand, 5.6-6.0, 5.1-6.0, 0.0-0.5, to prevent dormancy.
- WA1 — Pullman, Wash., silt loam and silt, 5.6-6.0, 3.1-4.0, 0.1875, to prevent stress.
- WA3 — Puyallup, Wash., (native soil), sandy loam, 5.6-6.0, 5.1-6.0, 0.0-0.5, to prevent stress.
- WA4 — Puyallup, sand, 6.1-6.5, 7.1-8.0, 0.0-0.5, to prevent stress.
- WI1 — Madison, Wis., sand, 7.6-8.5, 2.1-3.0, 0.1875, to prevent stress.
- WI2 — Madison, silt loam and silt, 6.6-7.0, 2.1-3.0, 0.1875, to prevent stress.

## New bents superlative

Continued from previous page

have shown a tendency to thatch, he defends them. "The results to date show they are appreciably denser and finer textured," he said. "But they are bred that way to tolerate a lower height of cut. Better density also means better wear tolerance."

The next generations of bentgrasses should reach even higher plateaus, the breeders believe.

"I think the most important thing is putting quality," Hurley said. "People make a big deal about dollar spot. But that is the easiest disease to control. I'm interested in less spike marks, more upright growth — that sort of thing."

"With today's irrigation, and as good as superintendents are today, I'm not as interested in sheer heat tolerance as I am in disease resistance," Lynch said. "Our ultimate goal is to reduce the amount of pesticides and fungicides used."

Whatever bentgrass superintendents choose, Engelke said, "The problem we have is getting them to recognize that they have these tools and they now have to take advantage of them by changing management practices... The super has to get to know his environment, which greens are problem greens, and manage that way."

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