

1998 NTEP Creeping Bentgrass Cultivar Test (Fairway) – 2001 Results

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Objective

The objective of this study was to determine adaptability of bentgrass cultivars to golf course fairways. Additionally, various other commonly recommended species were included for comparison.

Rationale

Currently, creeping bentgrass is the most adapted species for use on golf course fairways. With genetic improvements, new creeping bentgrass cultivars as well as other species of bentgrass, Kentucky bluegrass, perennial ryegrass, and fine fescue may be adaptable for use on fairways. However, we are unsure of the long term performance of these grasses under fairway conditions.

How It Was Done

The study was located on number 7 fairway of Purdue's Kampen Golf Course. The original bentgrass was removed from the site with a sod cutter and the site was leveled slightly, and raked to create a seedbed. Starter fertilizer (8-22-16) was applied prior to seeding at 1.25 lbs P₂O₅/1000 ft². The study was seeded on 9 Sep. 98, covered with seed covers, and irrigated to encourage germination. Bentgrass cultivars were seeded at 1.0 lb/1000 ft², whereas perennial ryegrass was seeded at 6 lb/1000 ft², Kentucky bluegrass at 3 lb/1000 ft² and fine fescue at 2 lb/1000 ft². The area received 1.0 lb N/1000 ft² in Oct 98 and 1.5 lb N/1000 ft² in Nov 98 to encourage establishment. Annual maintenance includes mowing three times per week at 7/16 inch with clippings returned, irrigation to prevent drought stress, 3 lbs N, 0.5 lbs P₂O₅, and 2 lbs K₂O/1000 ft²/year, and other maintenance practices typical for golf course fairways.

Results to Date

- There are no statistical differences in average visual quality among the top 10 cultivars (Table 1).
- The same holds true for the three average where there were no statistical differences in average visual quality among the top 10 cultivars (Table 2).
- Century, Grand Prix, Backspin, Imperial, Penn G-6, Trueline, L-93, Seaside II, and Providence are the nine creeping bentgrass cultivars that appear in both of the two above mentioned groups.
- Creeping bentgrass cultivars as a group are outperforming the colonial bentgrasses, largely due to *Poa annua* infestation in the less competitive colonial bentgrass (Table 2).
- The Kentucky bluegrass, perennial ryegrass, and fine fescue are all performing poorly at this fairway mowing height.
- At this mowing height, creeping bentgrass is more competitive than the other species, which is evidenced by invasion of creeping bentgrass into the other plots.

Table 1. Visual quality ratings of various cultivars and species under fairway maintenance conditions on the Kampen Course in 2001.

Cultivar	Apr	May	June	July	Aug	Sep	Oct	Nov	Avg
Century (cr) ^b	6.0	6.3	7.0	7.0	6.7	6.3	6.0	5.3	6.3
Grand Prix (cr)	6.3	7.0	6.0	6.3	6.0	6.0	5.7	5.7	6.1
Backspin (cr)	6.0	6.3	6.7	6.7	6.3	6.0	5.3	5.0	6.0
Imperial (cr)	6.0	6.0	6.7	6.3	5.7	6.0	5.0	5.7	5.9
Penn G-6 (cr)	6.0	5.3	6.0	6.0	5.7	6.0	6.0	6.0	5.9
Trueline (cr)	6.0	6.0	6.0	6.7	5.0	5.7	6.0	5.0	5.8
L-93 (cr)	6.0	6.0	5.7	6.0	5.7	5.3	5.7	5.7	5.8
Seaside II (cr)	6.0	6.0	6.0	5.7	5.7	5.7	5.3	5.0	5.7
Providence (cr)	5.3	5.3	6.0	5.7	5.7	6.0	5.7	5.0	5.6
PST-0VN (cr)	5.7	6.0	5.7	5.7	5.0	5.3	5.3	5.3	5.5
Princeville (cr)	5.7	5.3	5.3	5.3	5.0	5.3	5.7	5.0	5.3
SRX 1BPAA (cr)	5.3	5.0	5.7	5.3	5.3	5.3	5.3	4.7	5.3
SR 1119 (cr)	5.3	5.3	5.7	6.0	5.7	5.3	4.7	4.7	5.3
Penncross (cr)	6.0	5.0	5.3	5.3	5.0	5.0	5.3	4.7	5.2
Brighton (SRX 1120) (cr)	4.3	4.7	5.3	5.7	5.7	5.7	5.0	4.3	5.1
Penneagle (cr)	5.0	4.7	4.7	4.7	5.0	5.0	4.7	4.3	4.8
ABT-Col-2 (co)	4.3	4.7	4.0	4.3	4.3	3.3	3.0	3.3	3.9
PST-9PM (co)	3.3	4.0	3.3	4.0	3.7	3.7	3.7	3.7	3.7
Midnight (kb)	4.3	5.0	3.7	3.3	2.3	3.3	3.3	2.3	3.5
Seaside (cr)	3.7	3.3	3.0	3.7	3.3	3.3	4.3	2.7	3.4
SR 7100 (co)	3.7	3.3	3.7	3.7	3.7	2.7	3.3	3.0	3.4
Radiance (PST-9HG) (co)	3.7	3.3	3.0	4.0	3.7	3.3	3.0	3.0	3.4
ISI At-5 (co)	3.0	3.7	3.3	3.7	3.7	3.3	3.0	3.0	3.3
SRX 7MODD (co)	3.0	3.7	3.0	3.3	3.3	3.3	3.7	2.7	3.3
Unique (kb)	4.3	5.0	3.0	3.3	2.7	3.0	2.7	2.3	3.3
Moonlight (kb)	3.7	4.7	3.7	2.7	2.3	2.7	3.0	2.0	3.1
SRX 7MOBB (co)	3.0	3.3	2.7	3.3	3.0	2.7	3.3	2.3	3.0
Tiger (cr)	3.0	3.3	2.3	3.3	3.3	2.7	3.0	2.3	2.9
GolfStar (i)	3.3	3.3	3.0	3.0	2.7	2.0	2.3	2.3	2.8
Brightstar II (pr)	3.3	3.3	2.7	2.3	2.3	2.3	3.0	2.0	2.7
SR 5100 + SR 3100 (ff)	4.0	3.7	2.3	2.0	2.0	2.0	2.0	2.0	2.5
Sun Rye (pr)	2.7	2.3	1.3	2.3	2.0	2.0	2.7	2.0	2.2
LSD (0.05)	1.6	1.5	1.5	1.0	1.0	1.1	0.9	1.0	0.9

^a Visual quality ratings were taken using a scale of 1 to 9 with 1 = no living turf, 5 = acceptable turf, and 9 = ideal turf.

^b Species abbreviations include cr = creeping bentgrass, co = colonial bentgrass, i = Idaho bentgrass, pr = perennial ryegrass, kb = Kentucky bluegrass, and ff = fine fescue.

Table 2. Color, spring green up, density, *Poa annua* for 2001, and visual quality yearly averages in 1999, 2000, 2001, and three year average of various cultivars and species under fairway maintenance conditions on the Kampen Course

Cultivar	Color ^a	Spring green up ^b	Density ^c			% Poa cover ^d	Visual quality ^e			
			Apr	July	Nov		1999	2000	2001	Avg
Backspin (cr) ^f	6.7	5.0	6.7	6.7	7.0	1.3	5.8	5.9	6.2	6.0
Century (cr)	6.7	4.7	7.0	7.0	7.7	3.0	5.4	6.1	6.6	6.0
Grand Prix (cr)	7.3	4.7	6.7	6.3	6.3	1.7	5.8	5.6	6.2	5.9
Providence (cr)	7.0	3.0	6.3	6.0	6.3	4.3	5.7	5.6	5.7	5.6
Trueline (cr)	6.7	3.0	6.0	6.0	5.3	4.0	5.1	5.6	5.9	5.5
Seaside II (cr)	6.3	2.7	6.0	6.0	6.3	2.3	4.9	5.7	5.7	5.5
Penn G-6 (cr)	6.7	3.7	6.0	6.7	6.0	5.0	4.6	6.1	5.8	5.5
Princeville (cr)	6.7	4.0	5.7	5.3	5.7	4.7	5.3	5.3	5.3	5.3
Imperial (cr)	6.7	3.7	6.3	6.7	6.0	3.7	4.8	5.3	5.9	5.3
L-93 (cr)	6.7	2.3	6.3	5.7	6.7	2.3	4.4	5.5	5.7	5.2
PST-0VN (cr)	7.0	3.0	6.0	5.7	5.3	6.7	4.7	4.7	5.5	5.0
Penncross (cr)	6.3	3.0	5.3	5.3	5.0	3.3	4.5	5.3	5.2	5.0
SRX 1BPAA (cr)	6.7	2.7	5.3	6.3	5.7	8.3	4.4	4.7	5.3	4.8
SR 1119 (cr)	6.3	2.0	5.3	6.0	5.0	2.3	4.3	4.5	5.4	4.8
Brighton (SRX 1120) (cr)	6.7	2.3	5.3	6.0	5.3	8.3	4.0	4.1	5.3	4.5
Penneagle (cr)	5.7	2.3	5.7	5.0	5.0	4.0	4.2	4.6	4.8	4.5
ABT-Col-2 (co)	4.7	2.7	5.0	5.0	4.3	20.0	4.4	4.4	3.9	4.2
Seaside (cr)	6.3	3.0	4.0	3.3	2.3	20.0	4.2	3.7	3.5	3.8
SR 7100 (co)	5.3	3.0	4.3	5.0	4.7	26.7	4.1	3.8	3.4	3.8
ISI At-5 (co)	6.7	2.7	5.0	4.7	4.3	38.3	3.7	3.6	3.4	3.6
SRX 7MODD (co)	6.7	2.3	4.3	5.0	4.7	33.3	4.0	3.5	3.4	3.6
Radiance (PST-9HG) (co)	5.7	2.3	4.0	4.7	4.3	21.7	3.7	3.7	3.4	3.6
PST-9PM (co)	6.0	1.7	4.7	4.7	5.3	28.3	3.7	3.4	3.7	3.6
Tiger (cr)	7.0	2.7	4.3	3.3	3.0	40.0	3.8	3.4	3.0	3.4
Unique (kb)	4.7	2.0	5.3	5.0	5.0	6.0	3.1	3.3	3.3	3.2
SRX 7MOBB (co)	7.0	2.0	4.0	4.3	3.3	30.0	3.1	2.9	3.1	3.0
GolfStar (i)	6.7	2.0	4.0	3.7	2.7	25.0	3.2	3.0	2.7	3.0
Midnight (kb)	6.3	3.0	6.0	4.7	4.7	11.7	2.8	2.9	3.5	3.0
Sun Rye (pr)	4.3	1.7	3.3	2.3	2.3	41.7	3.6	3.0	2.1	2.9
Moonlight (kb)	7.7	3.0	5.0	4.0	4.0	13.3	2.6	2.5	3.2	2.8
Brightstar II (pr)	6.7	2.3	4.3	2.7	2.7	25.0	2.9	2.7	2.7	2.8
SR 5100 + SR 3100 (ff)	4.0	3.7	5.3	3.3	3.3	11.7	2.6	2.9	2.3	2.6
LSD (0.05)	1.5	1.6	1.5	1.4	1.6	13.7	1.4	1.2	0.8	1.0

^a Color was rated on a scale of 1 to 9 where 1 = light green and 9 = ideal dark green on .29 May

^b Spring green up was rated on a scale of 1 to 9 where 1 = dormant and 9 = green on .4 April

^c Density is a visual estimate of living plants per unit area. 1 = bare and 9 = maximum.

^d Percent of plot area covered by *Poa annua*.

^e Visual quality ratings were taken using a scale of 1 to 9 with 1 = no living turf, 5 = acceptable turf, and 9 = ideal turf. Monthly ratings were averaged to obtain yearly average.

^f Species abbreviations include cr = creeping bentgrass, co = colonial bentgrass, i = Idaho bentgrass, pr = perennial ryegrass, kb = Kentucky bluegrass, and ff = fine fescue.