

1998 NTEP Bentgrass Cultivar Evaluation (Fairway)– 2002 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 in 2002 among the top 7 cultivars (Table 1).
- There are no statistical differences in the four-year average visual quality among the top 10 cultivars (Table 2).
- Century, Grand Prix, Imperial, Penn G-6, Trueline, L-93, and Seaside II are the seven creeping bentgrass cultivars that appear in both of the two above mentioned groups. These seven have been at the top of the list each of the four years of the study.
- Creeping bentgrass cultivars as a group outperformed the colonial bentgrasses, largely due to *Poa annua* infestation in the less competitive colonial bentgrass (Table 3).
- The Kentucky bluegrass, perennial ryegrass, and fine fescue that were included in the study are all performing poorly at this fairway mowing height and creeping bentgrass is invading all of these species (Table 4).
- When making cultivar selections, it is best to consult the NTEP web page at www.ntep.org for complete performance data from around the country on cultivars, placing special emphasis on how cultivars perform in IN, IL, KY, MI and/or OH (depending if you are located in northern, central, or southern IN) under the specific maintenance regime you intend for that grass.

Table 1. Visual quality ratings of various cultivars and species under fairway maintenance conditions on the Kampen Course in 2002.

Cultivar	Apr	May	June	July	Aug	Sep	Oct	Nov	Avg
Century (cr) ^b	6.0	5.3	6.0	6.3	7.7	7.0	6.7	6.7	6.5
L-93 (cr)	5.3	5.3	5.7	6.7	7.0	6.0	6.0	6.0	6.0
Grand Prix (cr)	5.0	5.7	6.0	6.0	6.7	6.0	5.7	5.3	5.8
Trueline (cr)	5.0	4.7	6.0	6.0	6.7	6.3	6.0	5.7	5.8
Imperial (cr)	5.7	4.7	5.3	6.0	6.7	6.0	5.7	5.7	5.7
Seaside II (cr)	4.7	4.7	5.3	6.0	7.0	6.0	6.7	5.3	5.7
Penn G-6 (cr)	5.0	5.0	5.7	6.0	6.3	5.7	6.0	5.7	5.7
Backspin (cr)	5.0	4.3	5.0	6.0	6.3	6.0	6.0	5.7	5.5
Providence (cr)	5.0	4.3	5.0	5.7	6.3	5.7	5.7	5.7	5.4
SRX 1BPAA (cr)	4.3	4.7	5.0	5.3	6.3	5.3	6.0	5.0	5.3
Princeville (cr)	4.3	4.3	5.3	5.0	6.3	5.3	5.7	5.3	5.2
Brighton (SRX 1120) (cr)	4.3	4.0	4.7	5.0	6.7	5.7	5.7	5.0	5.1
PST-0VN (cr)	4.0	4.7	5.3	5.3	5.3	5.3	5.7	5.0	5.1
SR 1119 (cr)	4.3	4.7	5.0	5.3	5.7	5.0	5.3	4.3	5.0
Penncross (cr)	4.0	4.3	5.0	5.0	4.7	4.7	5.3	5.0	4.8
Penneagle (cr)	4.0	4.0	4.3	4.7	5.0	5.0	5.0	4.3	4.5
Seaside (cr)	2.7	3.0	3.7	3.7	4.0	3.7	3.0	3.3	3.4
Tiger (cr)	3.0	2.7	3.3	3.7	3.7	3.3	3.0	3.3	3.3
Glory (PST-9HG) (co)	2.7	2.3	3.0	3.3	3.0	2.7	2.3	2.3	2.7
ABT-Col-2 (co)	3.0	2.3	2.7	2.3	2.7	2.7	2.3	2.3	2.5
Tiger II (ISI At-5) (co)	2.7	2.3	2.3	2.7	3.3	2.3	2.3	2.0	2.5
PST-9PM (co)	3.0	2.3	2.7	2.7	2.0	2.3	2.0	2.0	2.4
SRX 7MOBB (co)	3.0	2.0	2.3	2.3	2.0	2.3	2.3	2.0	2.3
SR 7100 (co)	3.3	2.0	2.7	2.7	2.0	2.0	2.0	2.0	2.3
SRX 7MODD (co)	3.0	2.0	2.0	2.3	2.0	2.0	2.0	2.0	2.2
GolfStar (i)	2.3	2.0	2.0	2.0	2.3	2.0	2.0	2.0	2.1
LSD (0.05)	1.0	1.0	1.3	1.3	1.3	1.2	1.4	1.1	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, and i = Idaho bentgrass.

Table 2. Visual quality yearly averages in 1999, 2000, 2001, 2002, and three year average of various cultivars and species under fairway maintenance conditions on the Kampen Course.

Cultivar	1999	2000	2001	2002	Avg
Century (cr) ^b	5.4	6.1	6.3	6.5	6.1
Grand Prix (cr)	5.8	5.6	6.1	5.8	5.8
Backspin (cr)	5.8	5.9	6.0	5.5	5.8
Trueline (cr)	5.1	5.6	5.8	5.8	5.6
Penn G-6 (cr)	4.6	6.1	5.9	5.7	5.6
Providence (cr)	5.7	5.6	5.6	5.4	5.6
Seaside II (cr)	4.9	5.7	5.7	5.7	5.5
L-93 (cr)	4.4	5.5	5.8	6.0	5.4
Imperial (cr)	4.8	5.3	5.9	5.7	5.4
Princeville (cr)	5.3	5.3	5.3	5.2	5.3
PST-0VN (cr)	4.7	4.7	5.5	5.1	5.0
SRX 1BPAA (cr)	4.4	4.7	5.3	5.3	4.9
Penncross (cr)	4.5	5.3	5.2	4.8	4.9
SR 1119 (cr)	4.3	4.5	5.3	5.0	4.8
Brighton (SRX 1120) (cr)	4.0	4.1	5.1	5.1	4.6
Penneagle (cr)	4.2	4.6	4.8	4.5	4.5
ABT-Col-2 (co)	4.4	4.4	3.9	2.5	3.8
Seaside (cr)	4.2	3.7	3.4	3.4	3.7
Glory (PST-9HG) (co)	3.7	3.7	3.4	2.7	3.4
SR 7100 (co)	4.1	3.8	3.4	2.3	3.4
Tiger (cr)	3.8	3.4	2.9	3.3	3.3
Tiger II (ISI At-5) (co)	3.7	3.6	3.3	2.5	3.3
PST-9PM (co)	3.7	3.4	3.7	2.4	3.3
SRX 7MODD (co)	4.0	3.5	3.3	2.2	3.2
SRX 7MOBB (co)	3.1	2.9	3.0	2.3	2.8
GolfStar (i)	3.2	3.0	2.8	2.1	2.8
LSD (0.05)	1.5	1.2	0.9	0.9	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, and i = Idaho bentgrass.

Table 3. Color, green-up, density, and percent cover for 2002 of various cultivars and species under fairway maintenance conditions on the Kampen Course.

Cultivar	Color ^a	Green-up ^b	Density ^c			Percent cover ^d	
			Apr	July	Nov	<i>Poa annua</i>	Desired species
Century (cr) ^e	7.0	5.0	6.7	7.0	7.3	4.3	96.7
Trueline (cr)	8.0	5.7	5.7	6.0	6.0	8.3	96.0
Penn G-6 (cr)	7.0	4.7	5.7	6.0	7.0	11.7	95.3
Imperial (cr)	7.0	5.3	5.7	6.3	6.3	8.3	94.7
Backspin (cr)	7.0	4.3	5.3	6.0	6.3	3.0	94.7
Providence (cr)	7.0	5.0	5.3	6.0	6.7	10.0	94.3
Grand Prix (cr)	6.7	4.7	6.3	7.0	6.7	5.3	93.0
Princeville (cr)	7.3	5.7	4.7	5.3	5.3	11.7	92.7
L-93 (cr)	7.0	4.0	5.7	6.7	6.3	7.7	92.3
Seaside II (cr)	7.3	3.3	5.0	7.0	7.0	6.0	92.0
Brighton (SRX 1120) (cr)	7.3	4.0	5.0	6.0	6.3	10.0	90.0
Penneagle (cr)	7.0	4.0	4.7	4.7	5.7	6.7	90.0
SR 1119 (cr)	7.3	4.7	4.7	7.0	5.7	10.0	89.3
PST-0VN (cr)	7.3	4.3	4.7	6.0	6.0	16.7	88.3
Penncross (cr)	7.0	5.0	4.3	6.0	5.3	14.3	88.3
SRX 1BPAA (cr)	7.7	5.3	5.7	6.7	6.3	25.0	85.0
Seaside (cr)	6.3	6.0	2.3	3.3	3.0	70.0	70.0
Tiger (cr)	5.7	4.3	3.7	5.7	5.3	50.0	61.7
Glory (PST-9HG) (co)	6.0	3.7	3.7	5.3	5.7	36.7	28.0
ABT-Col-2 (co)	5.7	3.3	4.7	6.3	5.3	31.7	27.7
PST-9PM (co)	5.7	3.7	3.7	6.0	6.0	51.7	19.0
SRX 7MOBB (co)	6.3	2.7	2.7	4.7	5.7	48.3	16.7
Tiger II (ISI At-5) (co)	5.7	2.3	3.0	6.7	6.0	43.3	13.3
SR 7100 (co)	6.0	3.3	4.0	5.0	5.3	48.3	10.0
SRX 7MODD (co)	5.7	3.0	4.0	5.3	6.0	43.3	9.3
GolfStar (i)	6.0	3.3	3.7	4.0	5.0	50.0	5.0
LSD (0.05)	0.8	NS	1.5	1.4	0.9	19.1	18.1

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

^b 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* or desired species.

^e Species abbreviations include cr = creeping bentgrass, co = colonial bentgrass, and i = Idaho bentgrass.

Table 4. Percent cover for 2002 of Kentucky bluegrass, perennial ryegrass and fine fescue plots under fairway maintenance conditions on the Kampen Course.

Cultivar	Percent cover ^a	
	<i>Poa annua</i>	Creeping bentgrass
Unique (kb) ^b	15	45
Midnight (kb)	15	42
Sun Rye (pr)	55	27
Moonlight (kb)	25	47
Brightstar II (pr)	38	23
SR 5100 + SR 3100 (ff)	18	52

^a Percent cover of the plot area by *Poa annua* or creeping bentgrass on 14 May.

^b Species abbreviations include pr = perennial ryegrass, kb = Kentucky bluegrass, and ff = fine fescue.