

## 1998 NTEP Bentgrass Cultivar Evaluation - 2000 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 P<sub>2</sub>O<sub>5</sub>/1000 ft<sup>2</sup>. 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 ft<sup>2</sup>, whereas perennial ryegrass was seeded at 6 lb/1000 ft<sup>2</sup>, Kentucky bluegrass at 3 lb/1000 ft<sup>2</sup> and fine fescue at 2 lb/1000 ft<sup>2</sup>. The area received 1.0 lb N/1000 ft<sup>2</sup> in Oct 98 and 1.5 lb N/1000 ft<sup>2</sup> 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, 4 lbs N, 2 lbs P<sub>2</sub>O<sub>5</sub>, and 4 lbs K<sub>2</sub>O/1000 ft<sup>2</sup>/year, and other maintenance practices typical for golf course fairways.

### Results to Date

The creeping bentgrass cultivars as a group are outperforming the colonial bentgrasses as well as the other species in the study (Table 1). Penn G-6, Century, and Backspin performed the best in 2000. At fairway height, Penncross is still performing adequately even though it is an old cultivar. The colonial bentgrasses performed poorly primarily because of their poor aggressiveness against *Poa annua*, but they are more dollar spot resistant than creeping bentgrass cultivars. As expected, the Kentucky bluegrasses, perennial ryegrasses, and fine fescues are not performing well under the 7/16 inch mowing heights in this study. These grasses should be mowed at a minimum of 3/4 inch and preferably higher for the best chances of acceptable performance in a fairway setting. It is still too early to draw definite conclusions from this study and it will continue through the 2002 growing season.

**Table 1.** Green-up, density, dollar spot, *Poa annua* and visual quality of various cultivars and species under fairway maintenance conditions on the Kampen Course in 2000.

	Green up <sup>a</sup>	Density <sup>b</sup>			Dollar spot <sup>c</sup>	% poa cover <sup>d</sup>	Visual quality <sup>e</sup>						
		May	July	Sep			May	June	July	Aug	Sep	Oct	Avg
Penn G-6 (cr) <sup>f</sup>	7.0	6.3	5.3	6.0	9.0	15	5.3	6.3	6.3	6.7	6.0	6.0	6.1
Century (cr)	6.7	5.3	6.7	7.3	7.3	13	6.0	5.7	6.0	6.3	6.7	5.7	6.1
Backspin (cr)	6.3	5.7	5.3	6.3	7.0	10	5.7	6.0	5.3	5.7	6.7	6.3	5.9
Seaside II (cr)	5.3	6.3	5.0	5.3	9.0	15	5.7	5.3	5.3	6.0	5.7	6.3	5.7
Grand Prix (cr)	6.7	6.3	4.3	5.7	7.0	15	5.0	6.0	5.7	6.3	6.0	4.7	5.6
Trueline (cr)	6.0	5.0	4.7	5.0	8.3	13	4.7	6.0	6.0	5.7	5.7	5.7	5.6
Providence (cr)	6.0	6.3	5.3	5.7	8.3	12	5.0	6.3	6.0	5.3	5.3	5.3	5.6
L-93 (cr)	6.7	6.7	4.3	6.0	8.3	15	4.7	5.0	5.3	6.0	5.7	6.3	5.5
Princeville (cr)	6.3	5.0	3.7	5.0	8.3	18	5.0	5.3	5.3	6.0	4.7	5.7	5.3
Penncross (cr)	7.0	6.0	4.3	4.7	9.0	12	5.0	5.7	5.7	5.7	4.7	5.3	5.3
Imperial (cr)	6.3	5.7	5.3	6.3	7.0	20	5.0	5.0	5.3	5.7	5.0	5.7	5.3
SRX 1BPAA (cr)	6.3	5.3	5.0	5.0	9.0	18	4.0	4.7	5.0	5.7	4.7	4.3	4.7
PST-0VN (cr)	6.0	5.0	4.7	4.3	9.0	23	4.3	4.3	4.3	4.7	5.0	5.7	4.7
Penneagle (cr)	5.3	4.7	3.7	4.3	7.7	15	4.7	5.0	4.3	4.3	4.3	4.7	4.6
SR 1119 (cr)	5.7	5.3	4.7	4.3	8.3	15	4.7	5.0	4.3	4.7	4.0	4.3	4.5
ABT-Col-2 (co)	7.3	5.7	6.0	4.7	7.3	37	4.0	4.0	4.3	5.0	4.7	4.3	4.4
SRX 1120 (cr)	5.7	5.0	4.0	4.7	9.0	18	4.0	4.7	4.3	3.7	4.3	3.7	4.1
SR 7100 (co)	7.7	5.0	5.7	4.7	9.0	30	4.0	3.3	3.7	3.7	4.3	3.7	3.8
Seaside (cr)	8.0	4.3	2.7	2.3	9.0	33	4.0	3.7	3.7	4.3	3.3	3.3	3.7
PST-9HG (co)	7.0	4.7	4.7	5.0	9.0	47	3.0	4.0	3.3	4.3	3.7	3.7	3.7
ISI At-5 (co)	7.0	4.0	3.7	4.0	9.0	50	3.3	3.3	3.3	3.7	4.0	3.7	3.6
SRX 7MODD (co)	6.3	4.0	4.7	4.7	9.0	40	3.3	3.0	3.3	3.7	4.0	3.7	3.5
PST-9PM (co)	7.3	5.0	3.7	4.3	9.0	33	3.3	3.7	3.7	3.3	3.3	3.3	3.4
Tiger (cr)	7.3	4.3	4.0	4.3	9.0	57	3.0	2.7	3.7	4.0	4.0	3.0	3.4
Unique (kb)	5.7	2.7	2.3	4.0	9.0	30	3.0	3.7	3.3	3.0	3.7	3.0	3.3
GolfStar (I)	6.0	4.0	3.7	4.0	9.0	53	2.7	3.0	3.3	3.7	2.7	2.7	3.0
Sun Rye (pr)	6.0	3.7	2.7	3.0	9.0	40	4.3	3.0	2.7	2.7	2.7	2.7	3.0
SRX 7MOBB (co)	7.0	4.3	3.0	4.7	9.0	43	3.3	3.3	2.7	2.7	3.0	2.7	2.9
SR 5100+3100 (ff)	5.7	3.0	2.7	4.3	9.0	50	3.7	2.7	3.0	2.0	3.7	2.7	2.9
Midnight (kb)	5.0	3.0	3.3	4.0	9.0	33	2.7	3.0	3.0	2.3	3.7	2.7	2.9
Brightstar II (pr)	5.7	3.3	2.3	3.3	9.0	37	3.7	2.7	2.3	2.3	2.3	2.7	2.7
Moonlight (kb)	5.0	2.7	2.3	3.3	9.0	40	2.3	2.7	2.7	2.3	3.0	2.0	2.5
LSD(0.05)	1.4	1.5	1.9	1.5	1.5	16	1.2	1.6	1.6	1.9	1.8	1.9	1.2

<sup>a</sup> Greenup was visually rated on 24 Mar 2000 on a scale of 1 to 9 where 1 = brown, 5 = acceptable, and 9 = fully green.

<sup>b</sup> Density was rated on 4 May, 8 July, and 14 Sep on a scale of 1 to 9 where 1 = dead, 5 = acceptable, and 9 = extremely dense fairway turf.

<sup>c</sup> Dollarspot was rated on 20 Oct on a scale of 1 to 9 where 1 = extreme damage, 5 = moderate infection, and 9 = no infection.

<sup>d</sup> Percent *Poa annua* was rated on 6 June as a percent cover of each plot.

<sup>e</sup> Quality was visually rated in 2000 on a scale of 1 to 9 where 1 = dead, 5 = acceptable, and 9 = perfect.

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