

1998 NTEP Bentgrass Cultivar Evaluation

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Objective

The objective of this study was 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' 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 per 1000 sq. ft. 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 per1000 sq. ft., whereas perennial ryegrass was seeded at 6 lb per1000 sq. ft., Kentucky bluegrass at 3 lb per 1000 sq. ft. and fine fescue at 2 lb per1000 sq. ft. The area received 1.0 lb N per 1000 sq. ft. in Oct 98 and 1.5 lb N per 1000 sq. ft. 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 P₂O₅, and 4 lbs K₂O per 1000 sq. ft./year, and other maintenance practices typical for golf course fairways.

Results to Date

- Because of the dry fall of 1998, germination and establishment lagged behind what was expected and thus performance of the cultivars to date are somewhat lower than expected.
- The creeping bentgrass cultivars as a group are outperforming the colonial bentgrasses as well as the other species in the study. Grand Prix, Backspin, and Providence are among the top performers to date in this study. GolfStar is an Idaho bentgrass more suited for low maintenance conditions than the conditions used in this study.
- 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 throughout the 2002 growing season.

Table 1. Seedling cover, greenup, density, cover, and visual quality of various cultivars and species under fairway maintenance conditions on the Kampen Course in 1998 and 1999.

	seedling cover ^a	green up ^b	density ^c		cover ^d	Visual quality ^e						
			summer	fall		May	June	July	Aug	Sep	Oct	Avg
Grand Prix (cr) ^f	53	3.7	6.3	4.7	92	5.7	5.7	5.7	5.7	6.0	6.3	5.8
Backspin (cr)	62	3.7	6.7	5.7	96	5.7	5.3	6.3	5.3	6.0	6.3	5.8
Providence (cr)	60	3.0	5.0	4.3	94	5.7	5.3	6.7	4.7	5.7	6.0	5.7
Century (cr)	60	4.0	7.3	6.3	93	5.3	5.0	6.3	5.0	5.3	5.7	5.4
Princeville (cr)	60	3.3	4.0	4.3	93	5.3	5.3	5.3	4.7	5.0	6.3	5.3
Trueline (cr)	60	3.7	5.7	4.0	92	5.3	4.3	5.3	5.0	4.7	6.0	5.1
Seaside II (cr)	58	3.0	5.3	4.3	91	4.7	4.7	6.0	4.0	5.0	5.3	4.9
Imperial (cr)	58	4.3	5.7	4.7	92	4.7	4.3	5.0	5.3	4.7	4.7	4.8
PST-0VN (cr)	57	3.7	5.3	4.0	88	5.0	4.3	5.0	4.3	5.0	4.7	4.7
Penn G-6 (cr)	60	4.0	4.3	4.7	88	4.7	4.0	4.0	4.3	5.3	5.0	4.6
Penncross (cr)	58	3.7	4.0	3.3	90	5.0	4.7	4.3	4.0	4.0	5.0	4.5
L-93 (cr)	58	4.0	6.0	5.0	90	4.3	4.0	4.7	4.7	4.3	4.7	4.4
SRX 1BPAA (cr)	65	4.0	5.7	4.3	89	4.3	4.0	5.0	4.3	4.3	4.7	4.4
ABT-Col-2 (co)	53	4.0	4.7	5.3	80	4.3	4.0	4.3	4.0	4.7	5.0	4.4
SR 1119 (cr)	63	3.3	5.7	4.3	88	5.0	4.0	4.7	4.0	3.7	4.7	4.3
Penneagle (cr)	57	3.3	4.3	3.3	78	4.7	4.0	4.7	3.7	4.0	4.3	4.2
Seaside (cr)	52	4.0	3.0	2.3	63	5.0	4.7	3.3	3.7	3.7	4.7	4.2
SR 7100 (co)	57	4.7	5.0	6.0	85	4.3	3.3	4.0	3.7	4.7	4.7	4.1
SRX 7MODD (co)	52	4.7	6.0	5.0	83	4.0	3.0	4.3	4.0	4.3	4.3	4.0
SRX 1120 (cr)	50	3.3	6.0	3.3	83	4.0	3.0	4.7	4.0	4.0	4.3	4.0
Tiger (cr)	40	5.0	3.7	4.3	72	4.0	3.7	4.0	3.7	4.0	3.7	3.8
ISI At-5 (co)	48	4.7	5.0	4.3	75	4.0	3.3	3.7	3.3	4.0	4.0	3.7
PST-9PM (co)	47	4.3	5.3	5.0	83	3.7	3.3	3.3	3.7	4.0	4.3	3.7
PST-9HG (co)	50	4.0	5.3	5.0	85	3.7	3.0	3.7	3.3	3.3	5.0	3.7
GolfStar (i)	50	4.3	5.3	4.0	71	3.3	2.7	2.7	3.0	3.7	3.7	3.2
SRX 7MOBB (co)	48	4.7	5.7	4.7	82	3.3	2.3	3.0	3.3	3.3	3.3	3.1
Sun Rye (pr)	50	2.3	3.0	3.7	68	4.3	3.7	3.0	3.0	3.3	4.0	3.6
Unique (kb)	35	2.7	3.0	3.7	76	2.7	3.0	3.0	3.0	3.7	3.3	3.1
Brightstar II (pr)	55	2.3	2.3	3.0	67	3.7	3.0	3.0	2.3	2.7	3.0	2.9
Midnight (kb)	43	4.0	4.0	3.7	73	3.0	2.3	3.0	2.3	3.0	3.3	2.8
Moonlight (cb)	37	3.0	2.7	3.0	63	2.7	2.3	2.7	2.3	2.3	3.3	2.6
SR 5100+3100 (ff)	32	3.0	2.0	3.3	53	3.3	3.0	2.3	2.0	2.3	2.7	2.6
LSD (0.05)	15	0.8	1.7	1.5	19	1.5	1.4	1.8	1.6	1.7	2.0	1.4

^a Seedling cover was rated on 25 Oct 1998 as a percent of the plot covered by the desired species.

^b Greenup was visually rated on 27 Mar 1999 where 1=brown, 5=acceptable, and 9=fully green.

^c Density was rated on 8 Aug and 12 Oct 1999 on a scale of 9 to 1 where 9=extremely dense fairway turf, 5=acceptable, and 1=dead.

^d Cover was rated visually on 8 Aug as a percent of the plot covered by the desired species.

^e Quality was visually rated in 1999 on a scale of 9 to 1 where 9=perfect, 5=acceptable, and 1=dead.

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