

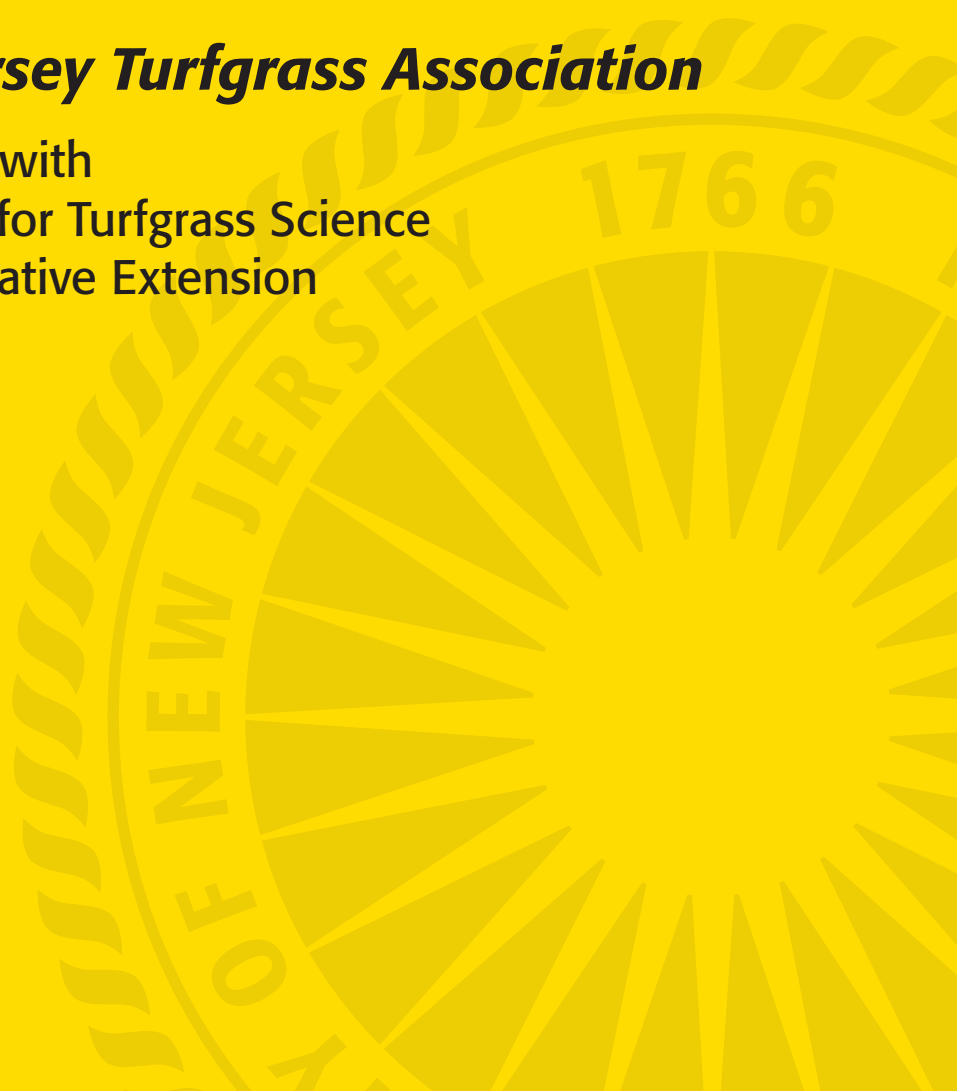
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The Rutgers Turfgrass Proceedings is published yearly by the Rutgers Center for Turfgrass Science, Rutgers Cooperative Extension, and the New Jersey Agricultural Experiment Station, School of Environmental and Biological Sciences, Rutgers, The State University of New Jersey in cooperation with the New Jersey Turfgrass Association. The purpose of this document is to provide a forum for the dissemination of information and the exchange of ideas and knowledge. The proceedings provide turfgrass managers, research scientists, extension specialists, and industry personnel with opportunities to communicate with co-workers. Through this forum, these professionals also reach a more general audience, which includes the public.

This publication includes lecture notes of papers presented at the 2008 New Jersey Turfgrass Expo. Publication of these lectures provides a readily avail-

able source of information covering a wide range of topics and includes technical and popular presentations of importance to the turfgrass industry.

This proceedings also includes research papers that contain original research findings and reviews of selected subjects in turfgrass science. These papers are presented primarily to facilitate the timely dissemination of original turfgrass research for use by the turfgrass industry.

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Dr. Ann Brooks Gould, Editor
Dr. Bruce B. Clarke, Coordinator

PERFORMANCE OF BENTGRASS CULTIVARS AND SELECTIONS IN NEW JERSEY TURF TRIALS

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Bentgrass species have the distinct ability to form very dense, uniform, and fine textured surfaces under an extremely low height of cut. These unique qualities enhance their use in specialized, high maintenance areas such as golf course fairways, tees, and putting greens. There are three bentgrass species typically used for turf. These include creeping bentgrass (*Agrostis palustris* Huds. syn. *A. stolonifera* L.), colonial bentgrass (*A. tenuis* L. or *A. capillaris* L.), and velvet bentgrass (*A. canina* L.). Used less frequently, highland or dryland bentgrass (*A. castellana* Boiss. & Reut.) can be an option for turf in stressful areas. Due to their growth habits, creeping and velvet bentgrasses are best conditioned for the very low cutting heights required for golf course greens in the United States. Colonial bentgrass responds best to a slightly higher height of cut, so it is usually better suited for fairways in temperate areas of the United States.

Creeping bentgrass is highly stoloniferous and has a prostrate growth habit, which permits persistence under very low mowing heights of up to 1/8 of an inch or less. Cutting heights of 1/10 of an inch can be expected on many of the top tier golf courses. Creeping bentgrass is highly adapted to both cool-temperate as well as warm-humid regions of the United States, making it the most popular species used on golf course putting greens in temperate areas. Its vigorous, spreading growth habit also contributes to its ability to repair damaged areas quickly. In 1954, H.B. Musser released Pennncross, the first seeded synthetic variety of creeping bentgrass (Musser, 1959). Since that time, breeding efforts have markedly improved creeping bentgrass varieties to withstand the increasing demands of the game of golf, addressing the need for better turf quality, darker green color, improved shoot density, traffic tolerance, and recuperative ability, and increased disease and stress tolerance. Dollar spot is one of the major

disease problems of close-cut creeping bentgrass. However, bentgrass can also be susceptible to brown patch, copper spot, anthracnose, and Pythium root disease.

Colonial bentgrass, also referred to as browntop, has traditionally been used as a lawn and golf course grass in the areas of Northern Europe and New Zealand that have mild (cool and humid) summers. Compared to creeping bentgrass, colonial bentgrass has a finer leaf texture and a more upright and less aggressively spreading growth habit. In addition, colonial bentgrass is generally better adapted for fairway or tee use in the warmer summer climates of the United States. Colonial bentgrass performs best in New Jersey when mowed no lower than 3/8 of an inch. Compared to creeping bentgrass, colonial bentgrass typically has a brighter green color as well as better color retention during cool weather, wear tolerance, and resistance to dollar spot. This species is much more susceptible, however, to brown patch. While not lethal, the playability of golf courses may be affected if brown patch is not controlled, and current breeding efforts include improving the tolerance of colonial bentgrasses to this disease.

Velvet bentgrass forms the finest-textured and most dense turf of the bentgrasses and can nearly resemble green velvet when managed properly. The grass spreads mainly through profuse production of erect tillers with short stolons. This grass can tolerate very close mowing, heat, cold, and shade, and is one of the most drought tolerant of the bentgrasses used for turf (Skogley, 1973). Due to the density and vigor of this turf, even under very low mowing conditions, velvet bentgrass stands are extremely impervious to encroachment by *Poa annua*, the most prolific weed on golf courses. The spread of velvet bentgrass via stolons is more aggressive than that of colonial

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bentgrass, but is less aggressive than that of creeping bentgrass. Velvet bentgrass can form excessive thatch, especially at high fertility rates, increased irrigation, and at higher cutting heights, and can thus become problematic if not maintained properly. Years of mismanagement with subsequent poor turf quality has given velvet bentgrass a bad name, but recent research shows that when managed properly, velvet bentgrass can create a superior turf (Brilman and Meyer, 2000). This species is also susceptible to red thread and copper spot, but, in general, has good resistance to dollar spot and brown patch. Seedlings of velvet bentgrasses are susceptible to Pythium seedling root rot during establishment.

During colder weather, velvet bentgrass turf will turn dark purple and will take longer than the other bentgrass species to green up in the spring. Velvet bentgrass has not been used extensively for high maintenance turf, largely because its range of adaptation has not been well characterized. Selections of velvet bentgrass have persisted for many years in trials under New Jersey growing conditions. Recent research at Rutgers indicates that the species may one day serve as a viable alternative to creeping bentgrass for use on golf course greens in the Northeastern U.S, as long as proper cultural management inputs are implemented. Some of the major breeding objectives for velvet bentgrass include wear tolerance as well as resistance to copper spot and Pythium root disease.

The New Jersey Agricultural Experiment Station participates in the National Turfgrass Evaluation Program (NTEP), which evaluates many species of turfgrass, including bentgrasses, at various locations throughout the United States. The Rutgers turfgrass breeding program conducts extensive field evaluations of collections and new material developed in the improvement program, many of which are a result of recent collection trips within the United States and throughout Europe and Asia. Collections from Norway, Sweden, Spain, Portugal, France, Finland, Switzerland, Scotland, Italy, Greece, Poland, Holland, Bulgaria, Romania, Croatia, China, and the Slovak Republic serve to enhance the genetic diversity of the germplasm used in this breeding program. The Rutgers turfgrass breeding program focuses on improving turfgrasses for overall quality, color, density, uniformity, texture, disease resistance, salt tolerance, traffic tolerance, and many other aspects of turf grown for a variety of purposes.

PROCEDURES

Bentgrass evaluation trials were established at the Rutgers Horticultural Research Farm II in North Brunswick, NJ in the fall of 2004 (Tables 1 and 2), 2005 (Table 3), 2006 (Tables 4, 5, and 6), and 2007 (Tables 7 and 8). Trials were established on a modified Nixon loam. Plot size was 3 x 5 ft for all trials. Plots were hand-seeded at a rate of approximately 0.5 lb/1000 ft². All tests were arranged in a randomized complete block design with three replications.

All sites were well drained and exposed openly to both sunlight and air circulation. The annual rate of nitrogen applied, mowing height, cultivation and topdressing practices, and pesticide applications for each test are presented in Table 9. The putting green tests were mowed five to six times per week during periods of active growth with a triplex or walk-behind reel mower equipped to collect clippings. The fairway tests were mowed and clippings were removed three times per week with a triplex reel mower during periods of active growth. Soil pH was maintained in the range of 6.0 to 6.5 with agricultural limestone. All tests were irrigated to avoid drought stress.

Plots were evaluated frequently during the growing season for overall turf quality (i.e. turf density, texture, uniformity, color, growth habit, and presence of disease and insect damage). Turf quality, wear tolerance, spring green-up, genetic color, density, leaf texture, and disease were rated on a 1 to 9 scale, where 9 represented the most desirable turf characteristic. Disease ratings included brown patch (Tables 4, 6 to 8), dollar spot (Tables 4, 6 to 8), copper spot (Table 4, 5, and 7), and anthracnose (Table 1). All data were subjected to analysis of variance. Means were separated using Fisher's protected least significant difference (LSD) means separation test.

RESULTS AND DISCUSSION

Turf Quality Evaluations

Entries in Tables 1 through 6 are ranked according to their overall multi-year quality average. Tables 7 and 8 are ranked by the average turf quality for 2008. Throughout all of the years for which this characteristic was rated, a few varieties in each bentgrass species stood out among the rest. For creeping bentgrasses maintained at a putting green

height of cut, Tyee, Shark, Runner, Authority, Kingpin, Declaration, 007 and the experimental SRX 1WM Comp all performed very well, while Penncross, Providence, Sandhill, and Brighton were among the poorest performers. At a fairway height, Declaration, Tyee, Shark, 007, and SRX 1WM Comp creeping bentgrasses both had excellent turf quality, while the lowest scoring cultivars were Penncross, Crenshaw, Providence, Brighton, and Penneagle.

Overall turf quality was evaluated for velvet bentgrasses every year. The cultivars Greenwich, Villa, Vesper, and Legendary were among the highest rated in every putting green test in which they were included. The cultivar SR 7200 rated the lowest for a 1/8-inch cut. When mowed at fairway height, Villa and Greenwich were the top performers. Velvet bentgrass cultivars SR 7200 and the experimental selection PST-Bulk-VRZ did not rate well for turf quality on fairways.

Turf quality was also rated for colonial bentgrass. As mentioned previously, colonial bentgrasses perform better at fairway cutting height and typically do not do well under putting green conditions as shown in Tables 1, 5, and 7. The experimental selections DEB Comp, MGD Comp, and the cultivar Capri all received high scores, while SRX 7EE, SR 7150, and SR 7100 performed the worst under fairway cutting heights.

Dollar Spot

Turf affected by *Sclerotinia homoeocarpa*, the causal agent of this widespread turfgrass disease, appears as spots of dead plants the size of silver dollars that may converge to form larger areas of damaged turf (Belanger et al., 2005). While potentially one of the more significant turf diseases on golf courses in New Jersey, dollar spot can be easily controlled with the use of fungicides. Unfortunately, disease control can be expensive because dollar spot occurs so frequently and resistance to fungicides has become more prevalent. Additionally, increased fungicide use is not beneficial to the environment.

Breeding for dollar spot resistance in bentgrass is an important objective of the Rutgers breeding program (Tables 4, 6 to 8). Typically, velvet and colonial bentgrasses are more resistant to dollar spot than creeping bentgrass; results from recent trials, however, indicate that disease resistance in creeping bentgrass has significantly improved. Declaration,

9002-1-3, FEC Comp, and 9034-1-6 rated well for resistance to this disease, while Ninety-Six Two, Imperial, Backspin, and Independence were most susceptible.

Brown Patch

Among the bentgrass species used for turf, velvet bentgrass is typically the most tolerant of brown patch (caused by the fungus *Rhizoctonia solani*), whereas colonial bentgrass is the most susceptible.

A major emphasis of the Rutgers breeding program, with dramatic results, has been to improve the resistance of colonial and creeping bentgrasses to brown patch (Tables 4, 6 to 8). The creeping bentgrasses Providence, GMC Comp, SRX 1WM Comp, 007, Tyee, Shark, PST-Syn-0J0, SR1119, and TDN2 Comp rated best for brown patch resistance, while Penn A-4 and Century were susceptible. The fact that the more resistant creeping bentgrasses rated higher than the velvet bentgrass entries could be indicative of improvement of cultivars for resistance to this disease. The most susceptible selections were colonial bentgrasses SR 7150, PST-9BNC, Alister, PCC Comp, and DEB Comp, while the most resistant were 9327-1-6 and LEB comp. PC2 Comp and IS-AC 4 velvet bentgrasses both performed well for resistance to this disease, but LAA-134 had the lowest rating (Table 7).

Copper Spot

In the northeast, copper spot has become increasingly troublesome during late spring and early summer due to the warm, wet conditions typical of this time of year. *Gloeocercospora sorghi*, the causal agent, is a fungus that produces 3- to 4-inch, red-brown patches on the turf. Copper spot ratings were included in the 2006 bentgrass putting green trial (Table 4), 2006 velvet bentgrass putting greens test (Table 5), and the 2007 greens test (Table 7). Velvet bentgrass continues to be very susceptible to infection by this fungus, and selection for resistance to this disease is a major goal of the Rutgers Turfgrass Breeding Program. This is evident in the 2006 velvet bentgrass putting green trial where experimental lines 9145-1-5 and 9152-6-12 topped the test while the cultivar Villa was the most susceptible. Colonial bentgrasses DEB Comp, LEB Comp, and 9355-6 all showed increased resistance while EBM-FTO was the most susceptible. Creeping bentgrasses RH 13-4 and T-1 creeping bentgrasses showed the greatest

resistance to infection but TDN1 Comp, Brighton, and Declaration exhibited the highest susceptibility.

Anthracnose

This disease is a major problem on close-cut bentgrass areas such as golf course greens and fairways. The causal agent of this disease is *Colletotrichum cereale*. Creeping bentgrass is typically more susceptible to anthracnose when compared to colonial bentgrass and velvet bentgrass. Susceptibility or resistance to this disease was evaluated on the 2004 putting green (Table 1). The creeping bentgrasses Shark and SRX 1WM213 both had the least disease but Viper and Providence proved to be susceptible. VE3 Comp and Villa velvet bentgrasses rated well while SR 7200 and SRX 7EW 88-34 rated poorly. In this test, colonial bentgrasses all rated poorly for this trait and were not statistically different. Glory, Alister, and PST-9R3, however, rated at the bottom for this trait.

Spring Green-Up

Spring green-up data was collected on the 2006 velvet bentgrass greens test (Table 5) and the 2006 greens test (Table 4). In general, velvet bentgrass typically has the poorest spring green-up compared to colonial and creeping bentgrass and can even exhibit a reddish or purple color during cold winter months. Another major research initiative of the Rutgers Turfgrass breeding program is to improve the spring green-up of velvet bentgrasses. In the 2006 velvet bentgrass greens test (Table 5), Villa, IS-AC-4, DDV Comp, and Legendary all possessed early spring green-up while DCV Comp and 9152-6-12 did not perform well. Creeping bentgrasses PST-Syn-0J0, TDN2 Comp, and Tyee had the highest rating for spring green-up in the 2006 greens test (Table 4) while PST-0166 Bulk and Cobra 2 had the lowest. LEB Comp and LMC Comp colonial bentgrasses had the earliest spring green-up among the colonials while Tiger II and 9343-6 had the lowest spring green-up ratings.

Wear Tolerance

The ability of a turf stand to handle wear is one of the more important traits in maintaining long term quality and playability of the surface. Wear can be applied to turfgrass through a number of ways such as driving machinery on the turf, cultivation procedures, and walking on the turf. Wear was simulated

on the 2004 (Table 2) and 2005 (Table 3) fairway trials by using a novel wear simulator (Bonos et al, 2001) which is an engine driven device with rotating rubber paddles that repeatedly hit the turf. Plots of different cultivars were then rated for their ability to remain green and dense under these conditions. Velvet bentgrasses exhibited more wear tolerance than the other bentgrass species, which can be seen in both tests in which this trait was rated. Velvet bentgrasses PST-VHD Bulk, PST-Syn-VH5, Greenwich, and PST-EVX-Bulk all had superior wear tolerance, while CP1 Comp, SR 7200 and Villa had lower ratings among this species. Colonial bentgrasses 04-EBM Comp and SRX 155-22 were the top performers for this species while PST-91R B.S. and SRX-781-21 rated poorly. Independence, SRX 1WM231, and Tyee creeping bentgrasses all showed increased wear tolerance but PST-Syn-016 and PST-OVE Bulk both showed severe damage due to the wear treatments.

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Table 1. Performance of creeping bentgrass cultivars and selections in a putting green trial seeded in September 2004 at North Brunswick, NJ.

Cultivar or Selection	Species	-----Turf Quality ¹ -----					Anthracnose ² 2008
		2005- 2008 Avg.	2005 Avg.	2006 Avg.	2007 Avg.	2008 Avg.	
1 Shark	Creeping	6.4	6.5	5.9	6.5	6.9	8.3
2 Tye	Creeping	5.8	6.5	5.0	6.1	5.7	6.7
3 Greenwich	Velvet	5.8	6.4	6.0	4.9	6.0	6.7
4 Runner	Creeping	5.8	6.7	5.1	5.5	5.9	6.7
5 MacKenzie	Creeping	5.8	6.4	5.9	5.5	5.4	6.0
6 Authority	Creeping	5.8	6.3	6.0	5.7	5.0	6.3
7 VE3 Comp	Velvet	5.7	5.3	5.2	5.3	6.8	8.3
8 EPC Comp	Creeping	5.5	6.1	5.3	5.1	5.3	5.7
9 Villa	Velvet	5.4	5.9	5.4	4.9	5.6	7.0
10 SRX 1BL1E	Creeping	5.3	6.0	5.2	5.2	4.8	6.7
11 DMC Comp	Creeping	5.3	5.5	5.0	5.2	5.5	6.7
12 SRX 1TR3E	Creeping	5.2	5.7	5.5	4.8	4.6	5.7
13 SRX 1WM231	Creeping	5.2	5.5	5.6	5.0	4.7	6.0
14 Kingpin	Creeping	5.1	5.8	5.6	4.5	4.4	6.0
15 SRX 1G32	Creeping	5.1	5.8	4.1	5.2	5.4	6.0
16 SRX 1BL2G	Creeping	5.0	5.8	4.6	4.7	4.9	5.3
17 SRX 146-12	Creeping	4.9	5.6	4.4	4.8	4.9	6.3
18 Declaration	Creeping	4.9	6.2	5.4	4.0	4.0	5.0
19 SRX 1WM213	Creeping	4.9	5.1	4.9	4.9	4.7	7.0
20 03-RSM-Comp	Creeping	4.9	5.5	4.8	5.2	4.2	6.0
21 PST-EVX Bulk	Velvet	4.9	4.9	4.9	5.1	4.8	5.7
22 Penneagle II	Creeping	4.8	5.3	4.7	4.7	4.6	5.7
23 Penn A-1	Creeping	4.8	5.3	4.4	5.1	4.4	5.7
24 SRX 1WM COMP	Creeping	4.8	5.2	4.9	4.8	4.3	6.0
25 Penn A-2	Creeping	4.7	5.2	4.4	4.5	4.8	6.3

(Continued)

Table 1 (continued).

	Cultivar or Selection	Species	-----Turf Quality ¹ -----					Anthracnose ² 2008
			2005- 2008 Avg.	2005 Avg.	2006 Avg.	2007 Avg.	2008 Avg.	
26	SRX 1WM3	Creeping	4.7	4.7	5.2	4.9	4.2	6.7
27	Penn G-2	Creeping	4.7	5.2	5.1	4.6	3.9	4.7
28	FDS2 Comp	Creeping	4.7	4.7	4.3	4.9	4.8	5.3
29	Independence	Creeping	4.6	5.6	3.9	4.1	5.0	6.3
30	SRX 1WM3102	Creeping	4.6	5.1	4.8	4.6	4.1	5.7
31	T-1	Creeping	4.6	5.2	4.2	4.3	4.5	6.3
32	Crystal BlueLinks	Creeping	4.5	5.3	5.1	3.9	3.7	4.0
33	Benchmark DSR	Creeping	4.5	5.4	5.1	3.9	3.5	4.0
34	PST-SYN-OSF	Creeping	4.4	5.2	4.9	4.2	3.4	4.3
35	PST-SYN-ONCE	Creeping	4.4	5.0	4.5	4.4	3.8	5.3
36	SR 1150	Creeping	4.4	4.9	4.2	4.5	4.1	5.7
37	SRX 1WM385	Creeping	4.4	4.8	4.3	4.5	3.9	6.7
38	SRX 1WM236	Creeping	4.4	4.9	4.6	4.6	3.5	4.3
39	SRX 1WM232	Creeping	4.4	4.4	4.6	4.7	3.9	5.3
40	Penn G-1	Creeping	4.3	4.6	3.9	4.4	4.4	4.7
41	FDS1 Comp	Creeping	4.3	5.6	4.3	4.3	3.2	4.3
42	EVA Comp	Velvet	4.3	3.8	4.2	4.4	4.6	5.0
43	L-93	Creeping	4.2	4.1	4.4	4.1	4.4	5.3
44	SR 1119	Creeping	4.1	4.6	4.1	3.8	3.9	5.0
45	MVA Comp	Velvet	4.1	4.4	4.2	4.0	3.9	5.0
46	PST-SYN-OHTY	Creeping	4.1	4.4	3.7	3.9	4.4	4.7
47	Southshore	Creeping	4.0	4.7	3.4	3.9	4.2	4.0
48	Penn A-4	Creeping	4.0	4.3	3.9	4.2	3.6	3.7
49	Alpha	Creeping	3.9	4.8	3.5	3.7	3.8	4.7
50	SR 7200	Velvet	3.9	4.8	4.3	3.4	3.3	3.3

(Continued)

Table 1 (continued).

	Cultivar or Selection	Species	-----Turf Quality ¹ -----					Anthracnose ² 2008
			2005- 2008 Avg.	2005 Avg.	2006 Avg.	2007 Avg.	2008 Avg.	
	51 Penn G-6	Creeping	3.9	4.1	3.8	4.5	3.3	4.7
	52 SRX 1WM39	Creeping	3.8	4.4	4.1	3.6	3.2	4.3
	53 Century	Creeping	3.8	4.9	2.9	3.7	3.8	4.7
	54 Penneagle	Creeping	3.6	3.7	3.6	3.8	3.6	5.0
	55 Crenshaw	Creeping	3.6	4.5	2.8	3.6	3.7	4.3
	56 SRX 7EW 88-34	Velvet	3.6	3.5	3.6	4.2	3.1	3.3
	57 Pennlinks	Creeping	3.6	3.6	3.2	3.8	4.0	4.7
	58 Putter	Creeping	3.6	4.2	3.2	3.7	3.2	4.0
	59 Pennlinks II	Creeping	3.5	3.9	3.9	3.3	2.8	3.0
∞	60 03-TTP- Comp	Creeping	3.3	4.2	3.6	3.4	2.1	3.3
	61 PST-ORF	Creeping	3.0	3.1	3.0	2.8	3.2	3.0
	62 Seaside II	Creeping	3.0	3.1	3.3	3.0	2.6	2.0
	63 Brighton	Creeping	3.0	3.5	2.9	3.2	2.3	3.3
	64 PST-ORF	Creeping	2.9	3.6	2.9	2.5	2.5	2.7
	65 Sandhill	Creeping	2.9	3.5	2.8	3.0	2.2	2.3
	66 Glory	Colonial	2.8	4.5	3.3	1.8	1.9	1.0
	67 Penncross	Creeping	2.8	3.2	3.3	2.3	2.4	2.3
	68 Eugene BLM	Creeping	2.7	1.7	3.0	3.5	2.7	3.7
	69 Viper	Creeping	2.7	3.5	2.7	2.6	1.8	1.7
	70 Alister	Colonial	2.7	4.1	2.8	2.1	1.7	1.3
	71 Providence	Creeping	2.6	3.4	3.0	2.3	1.7	1.7
	72 PST-9PIN	Colonial	2.6	3.9	2.5	2.3	1.8	2.0
	73 PST-9R3	Colonial	2.5	4.1	2.4	1.8	1.6	1.3
	74 PST-91R B.S.	Colonial	2.4	3.1	1.7	2.5	2.1	2.7
	75 PST-9VN	Colonial	2.3	3.3	2.3	1.9	1.4	1.7

(Continued)

Table 1 (continued).

Cultivar or Selection	Species	-----Turf Quality ¹ -----					Anthracnose ² 2008
		2005- 2008 Avg.	2005 Avg.	2006 Avg.	2007 Avg.	2008 Avg.	
LSD at 5% =		1.0	1.1	1.0	1.1	1.6	2.3

¹9 = best turf quality

²9 = least disease

Table 2. Performance of creeping bentgrass cultivars and selections in a fairway/tee trial seeded in September 2004 at North Brunswick, NJ.

	Cultivar or Selection	Species	-----Turf Quality ¹ -----					Wear Turf Quality ² 2008
			2005-2008 Avg.	2005 Avg.	2006 Avg.	2007 Avg.	2008 Avg.	
	1 PST-EVX-Bulk	Velvet	6.9	7.4	6.8	6.7	6.7	8.3
	2 Villa	Velvet	6.4	6.9	6.7	6.0	6.0	6.8
	3 Greenwich	Velvet	6.1	6.4	6.3	5.5	6.3	8.1
	4 SR 7200	Velvet	6.1	6.5	6.1	5.8	5.7	7.1
	5 Declaration	Creeping	5.7	6.5	6.6	4.0	6.0	6.7
	6 SRX 1WM385	Creeping	5.5	5.7	5.7	5.0	5.7	6.3
	7 SRX 1WM231	Creeping	5.5	6.7	6.1	4.5	4.7	6.7
	8 SRX 1WM213	Creeping	5.5	5.9	5.5	5.3	5.0	6.1
	9 9111-1-6	Colonial	5.4	4.7	6.0	5.7	5.3	4.5
10	10 SRX 1WM310Z	Creeping	5.4	6.2	5.1	4.5	5.7	6.2
	11 SRX 115-22	Colonial	5.4	5.7	6.1	4.3	5.3	6.9
	12 PST-9VN	Colonial	5.3	5.0	6.3	5.7	4.3	3.3
	13 BCD Comp	Colonial	5.3	6.1	6.4	4.2	4.7	3.7
	14 LDP Comp	Colonial	5.3	5.6	6.7	5.0	4.0	5.9
	15 9107-6-12	Colonial	5.3	4.9	6.1	5.0	5.3	5.1
	16 9111-6-12	Colonial	5.3	5.7	6.5	4.5	4.7	4.5
	17 SRX 1WM Comp	Creeping	5.2	5.7	5.5	4.5	5.3	5.8
	18 PST-SYN-9GPS	Colonial	5.2	5.6	5.7	5.0	4.7	4.3
	19 9108-1 & 5	Colonial	5.1	5.6	5.6	4.2	5.0	5.0
	20 SRX 1WM3	Creeping	5.1	5.6	4.9	4.5	5.0	6.0
	21 Tye	Creeping	5.0	5.3	4.8	4.0	6.0	6.0
	22 EBM Comp	Colonial	5.0	5.6	5.6	3.3	5.7	6.1
	23 SRX 1WM232	Creeping	5.0	5.4	5.1	4.8	4.7	5.9
	24 Shark	Creeping	5.0	6.0	5.4	3.3	5.3	6.2
	25 Penneagle II	Creeping	5.0	4.6	5.0	4.5	5.7	6.0

(Continued)

Table 2 (continued).

	Cultivar or Selection	Species	-----Turf Quality ¹ -----					Wear Turf Quality ² 2008
			2005- 2008 Avg.	2005 Avg.	2006 Avg.	2007 Avg.	2008 Avg.	
	26 SRX 1WM39	Creeping	4.9	5.8	4.8	4.0	5.0	6.2
	27 SRX 1W236	Creeping	4.9	6.0	5.5	3.8	4.3	6.4
	28 L-93	Creeping	4.9	4.4	5.2	4.7	5.3	5.7
	29 Tiger II	Colonial	4.9	4.9	5.8	3.5	5.3	4.8
	30 Crystal BlueLinks	Creeping	4.8	4.9	5.1	4.7	4.7	6.5
	31 Glory	Colonial	4.8	5.0	5.9	4.0	4.3	4.3
	32 Penn A-2	Creeping	4.8	5.3	5.1	4.2	4.7	5.7
	33 PST-SYN-ONCE	Creeping	4.8	5.2	4.7	4.3	4.7	5.5
	34 SR 1150	Creeping	4.7	5.4	5.6	3.5	4.3	5.1
11	35 Penn G-2	Creeping	4.7	5.9	4.6	4.2	4.0	4.6
	36 PST-SyN-OSF	Creeping	4.7	5.1	4.5	4.2	5.0	5.7
	37 PST-OHB Bulk	Creeping	4.6	5.2	4.4	3.8	5.0	5.0
	38 PST-9R3	Colonial	4.6	4.4	5.3	4.8	4.0	4.8
	39 9113-1&5	Colonial	4.6	4.6	5.3	3.5	5.0	4.0
	40 MacKenzie	Creeping	4.6	4.8	5.0	3.7	5.0	4.6
	41 Penn G-1	Creeping	4.6	4.8	4.9	4.0	4.7	5.9
	42 Kingpin	Creeping	4.6	4.9	4.8	5.0	3.7	4.3
	43 9110-8,9 & 10	Colonial	4.5	5.5	6.5	2.2	4.0	3.7
	44 PST-9PIN	Colonial	4.5	5.0	4.8	4.3	4.0	3.0
	45 9114-1-6	Colonial	4.5	3.8	5.6	4.0	4.7	3.7
	46 9118-1-6b	Colonial	4.5	4.2	5.5	4.0	4.3	4.4
	47 Alister	Colonial	4.5	4.8	5.3	3.3	4.3	5.3
	48 SRX 7CRCO	Colonial	4.5	4.6	5.5	3.5	4.3	4.3
	49 IS-AP-14	Creeping	4.4	5.9	4.5	2.8	4.3	5.9
	50 SRX 1G32	Creeping	4.4	5.0	4.5	3.0	5.0	6.4

(Continued)

Table 2 (continued).

	Cultivar or Selection	Species	-----Turf Quality ¹ -----					Wear Turf Quality ² 2008
			2005- 2008 Avg.	2005 Avg.	2006 Avg.	2007 Avg.	2008 Avg.	
51	SR 7100	Colonial	4.4	4.2	5.0	4.0	4.3	4.3
52	T-1	Creeping	4.3	4.3	4.3	4.3	4.3	5.4
53	SRX 1TR3E	Creeping	4.3	5.2	4.4	3.3	4.3	5.9
54	Penn A-1	Creeping	4.2	4.6	4.8	3.0	4.7	5.5
55	Sandhill	Creeping	4.2	4.2	4.6	4.0	4.0	4.2
56	9109-6-12	Colonial	4.2	3.8	5.1	4.3	3.7	3.8
57	SRX 7EE5	Colonial	4.2	5.0	5.0	2.7	4.0	3.1
58	SR 7150	Colonial	4.2	4.0	4.7	3.3	4.7	3.0
59	SRX 7EE	Colonial	4.1	4.5	4.6	3.3	4.0	3.4
60	Penn G-6	Creeping	4.1	4.7	4.2	3.5	4.0	5.8
61	SRX 1BLIE	Creeping	4.1	4.7	3.9	3.5	4.3	4.9
62	SRX 780-19	Colonial	4.1	4.1	4.4	3.5	4.3	3.7
63	PST-SYN-016	Creeping	4.0	3.9	4.1	4.2	4.0	3.5
64	Benchmark DSR	Creeping	4.0	4.8	3.9	3.3	4.0	4.1
65	Independence	Creeping	4.0	4.4	3.6	3.7	4.3	6.6
66	PST-ORF	Creeping	3.9	4.0	4.1	4.2	3.3	4.6
67	PST-SYN-OHTY	Creeping	3.9	4.5	3.9	3.5	3.7	5.1
68	Pennlinks II	Creeping	3.8	4.3	3.6	3.5	3.7	3.7
69	Penn A-4	Creeping	3.8	3.4	3.8	4.0	4.0	5.1
70	Alpha	Creeping	3.8	4.2	3.7	3.8	3.3	5.2
71	9118-6-12	Colonial	3.8	4.0	4.6	2.8	3.7	4.4
72	PST-ORF	Creeping	3.7	3.8	4.0	3.5	3.7	4.1
73	SRX 781-21	Colonial	3.7	3.4	3.4	3.7	4.3	2.6
74	Pennlinks	Creeping	3.6	3.6	3.6	3.5	3.7	4.1
75	Southshore	Creeping	3.6	3.1	3.9	4.0	3.3	4.3

(Continued)

Table 2 (continued).

Cultivar or Selection	Species	-----Turf Quality ¹ -----					Wear Turf Quality ² 2008
		2005-2008 Avg.	2005 Avg.	2006 Avg.	2007 Avg.	2008 Avg.	
76 Brighton	Creeping	3.6	3.7	3.7	3.5	3.3	3.6
77 PST-91R B.S.	Colonial	3.5	3.7	3.8	3.7	3.0	2.3
78 Penneagle	Creeping	3.5	3.8	4.0	2.8	3.3	4.3
79 Seaside II	Creeping	3.4	3.7	3.9	2.8	3.3	4.5
80 SR 1119	Creeping	3.4	3.4	3.8	3.5	3.0	4.1
81 SRX 7EE4	Colonial	3.4	4.0	4.4	2.7	2.7	2.6
82 Putter	Creeping	3.4	3.6	3.9	3.0	3.0	4.1
83 Penncross	Creeping	3.1	3.1	3.2	3.0	3.0	3.5
84 Century	Creeping	3.1	3.8	2.8	2.7	3.0	3.3
85 Viper	Creeping	3.0	3.1	3.2	2.5	3.0	3.2
86 Providence	Creeping	2.8	3.2	3.7	2.3	2.0	3.9
87 Crenshaw	Creeping	2.7	3.1	3.0	2.2	2.7	3.9
LSD at 5% =		0.6	0.8	0.8	1.4	1.1	1.4

¹9 = best turf quality

²9 = highest quality under wear conditions. A wear simulator was used to apply a total of 66 passes.

Table 3. Performance of creeping bentgrass cultivars and selections in a fairway/tee trial seeded in September 2005 at North Brunswick, NJ.

Cultivar or Selection	Species	-----Turf Quality ¹ -----					Wear Turf Quality ² 2008
		2005-2008 Avg.	2005 Avg.	2006 Avg.	2007 Avg.	2008 Avg.	
1 IS-AC-4	Velvet	6.6	5.2	7.0	6.8	7.3	7.2
2 EPC Comp	Creeping	6.4	5.8	6.4	6.3	6.8	6.1
3 PST-VHD Bulk	Velvet	6.3	5.8	6.1	6.9	6.3	8.0
4 04-EBM Comp	Colonial	6.1	6.5	6.2	5.4	6.3	5.2
5 CP3 Comp	Velvet	6.1	6.3	6.2	6.3	5.5	6.9
6 CP2 Comp	Velvet	6.1	5.8	5.6	6.0	6.8	7.2
7 Legendary	Velvet	5.9	5.0	6.1	5.7	6.7	6.5
8 PST-Syn-VH5	Velvet	5.9	5.3	5.7	6.3	6.3	8.3
9 FT1 Comp	Colonial	5.7	5.8	6.0	4.9	6.0	4.9
10 IS-AP-15	Creeping	5.7	5.8	5.7	5.7	5.5	6.2
11 Villa	Velvet	5.7	3.5	6.5	6.3	6.5	7.2
12 Greenwich	Velvet	5.6	5.3	6.6	5.0	5.5	7.8
13 PST-Syn-9NCS	Colonial	5.5	6.2	4.9	4.8	6.2	4.4
14 SRX 1WM Comp	Creeping	5.5	5.5	6.1	5.3	5.0	5.7
15 OO7	Creeping	5.4	5.7	5.9	4.8	5.0	5.1
16 DMC Comp	Creeping	5.4	5.3	5.6	4.7	5.7	4.9
17 LT3 Comp	Colonial	5.3	5.3	4.9	4.8	6.2	4.8
18 CP1 Comp	Velvet	5.3	4.5	5.4	5.7	5.5	6.4
19 Declaration	Creeping	5.2	4.8	7.2	5.1	3.8	4.9
20 Alister	Colonial	5.2	5.2	5.2	4.6	6.0	4.2
21 Tye	Creeping	5.2	4.7	6.0	5.0	5.0	7.2
22 FT2 Comp	Colonial	5.2	4.2	5.1	5.3	6.2	4.7
23 Penn A-1	Creeping	5.2	6.0	5.2	4.6	4.8	4.9
24 Penneagle II	Creeping	5.1	5.7	5.0	4.8	5.0	5.5
25 Independence	Creeping	5.1	5.2	4.7	4.6	6.0	5.4

(Continued)

Table 3 (continued).

	Cultivar or Selection	Species	-----Turf Quality ¹ -----					Wear Turf Quality ² 2008
			2005- 2008 Avg.	2005 Avg.	2006 Avg.	2007 Avg.	2008 Avg.	
26	PST-Syn-VNY	Velvet	5.1	4.8	5.3	5.2	5.2	7.4
27	IS-AT-8	Colonial	5.1	4.2	5.3	4.7	6.0	3.9
28	Crystal BlueLinks	Creeping	5.1	6.3	5.6	4.2	4.2	3.9
29	PST-Syn-ONB4	Creeping	5.1	5.8	5.3	4.9	4.2	5.5
30	PST-9NBC BS	Colonial	5.0	4.3	5.4	4.6	5.7	4.3
31	SR 7200	Velvet	5.0	4.0	5.8	4.7	5.5	6.4
32	SRX 1TR3E	Creeping	5.0	5.8	5.2	4.0	4.8	5.0
33	PST-Syn-OHTY-05	Creeping	4.9	7.8	4.3	3.2	4.2	4.7
34	SRX 1BL1E	Creeping	4.9	5.8	5.3	4.3	4.0	4.9
35	Runner	Creeping	4.8	4.3	5.4	4.5	5.0	5.3
36	PST-Syn-9MS	Colonial	4.8	4.0	5.0	4.6	5.7	4.4
37	Tiger II	Colonial	4.8	4.5	5.0	4.5	5.2	4.2
38	Penn A-4	Creeping	4.8	4.8	4.8	4.6	5.0	5.0
39	PST-Bulk-VRZ	Velvet	4.8	5.2	5.0	4.4	4.7	7.1
40	Penn G-2	Creeping	4.8	5.3	5.1	4.5	4.2	4.4
41	L-93	Creeping	4.8	5.2	4.5	4.8	4.7	4.5
42	Alpha	Creeping	4.7	5.7	5.4	3.9	3.8	4.4
43	SRX 7CRCO	Creep/Col	4.7	5.2	4.7	3.7	5.0	3.9
44	Glory	Colonial	4.6	4.2	4.5	4.4	5.3	3.8
45	Penn G-6	Creeping	4.6	4.5	4.5	4.6	4.5	4.7
46	Southshore	Creeping	4.6	5.7	3.5	4.5	4.5	4.5
47	LT1 Comp	Colonial	4.6	4.2	4.9	4.6	4.7	4.3
48	PST-OAS Bulk	Creeping	4.5	5.0	4.9	3.6	4.3	4.9
49	SRX 7EE	Colonial	4.4	4.2	4.9	3.6	5.0	3.8
50	PST-Syn-9B4	Colonial	4.4	4.2	4.9	3.7	4.7	3.6

(Continued)

Table 3 (continued).

	Cultivar or Selection	Species	-----Turf Quality ¹ -----					Wear Turf Quality ² 2008
			2005- 2008 Avg.	2005 Avg.	2006 Avg.	2007 Avg.	2008 Avg.	
51	SRX 7EE4	Colonial	4.3	5.8	4.3	3.2	4.0	2.9
52	PST-OBEL Bulk	Creeping	4.3	5.0	4.6	3.6	3.8	4.7
53	Pennlinks II	Creeping	4.3	6.3	4.4	3.4	2.8	2.7
54	LT2 Comp	Colonial	4.3	4.5	5.0	3.9	3.7	3.7
55	T-1	Creeping	4.2	5.5	4.8	3.5	3.3	4.1
56	SRX 7EE5	Colonial	4.1	4.2	4.5	3.2	4.5	3.2
57	Sandhill	Creeping	4.0	5.2	4.0	3.6	3.3	4.3
58	SRX 151-11E	Creeping	4.0	4.8	4.2	2.7	4.3	4.9
59	SR 7100	Colonial	4.0	3.5	4.4	3.5	4.5	2.9
60	SRX 1PDH	Creeping	3.9	3.7	4.9	4.1	3.2	4.1
61	PST-OVE Bulk	Creeping	3.9	5.8	4.2	2.8	2.7	2.4
62	Putter	Creeping	3.8	4.7	3.6	3.3	3.7	3.4
63	SR 7150	Colonial	3.8	5.2	3.8	2.7	3.5	2.5
64	SRX 146-12	Creeping	3.8	4.2	4.2	3.3	3.5	4.6
65	Pennlinks	Creeping	3.8	5.0	3.3	3.3	3.5	3.8
66	Crenshaw	Creeping	3.8	5.0	3.4	3.4	3.3	3.7
67	Pennway	Creeping	3.7	4.0	3.8	3.9	3.2	3.8
68	Brighton	Creeping	3.7	5.3	3.5	3.1	2.8	3.1
69	PST-OMR Bulk	Creeping	3.7	4.3	4.1	3.2	3.2	3.6
70	SR 1119	Creeping	3.7	4.3	3.9	3.3	3.2	3.1
71	Seaside II	Creeping	3.7	3.7	3.7	3.8	3.5	3.4
72	Penneagle	Creeping	3.6	4.2	3.4	4.2	2.8	4.1
73	Penncross	Creeping	3.6	5.3	3.3	3.1	2.8	3.2
74	PST-OASF Bulk	Creeping	3.5	4.2	3.5	3.0	3.2	3.3
75	Providence	Creeping	3.4	4.7	3.5	2.9	2.7	3.2

(Continued)

Table 3 (continued).

Cultivar or Selection	Species	-----Turf Quality ¹ -----					Wear Turf Quality ² 2008
		2005-2008 Avg.	2005 Avg.	2006 Avg.	2007 Avg.	2008 Avg.	
76 PST-09X Bulk	Creeping	3.2	3.2	3.9	2.8	3.0	2.8
77 PST-Syn-9505	Colonial	3.0	3.8	3.2	2.2	2.5	3.3
LSD at 5% =		0.8	1.7	0.8	1.0	1.3	1.3

¹9 = best turf quality

²9 = highest quality under wear conditions. A wear simulator was used to apply a total of 52 passes.

Table 4. Performance of creeping and colonial bentgrass cultivars and selections in a putting green trial seeded in September 2006 at North Brunswick, NJ.

Cultivar or Selection	Species	-----Turf Quality ¹ -----			Spring Green-up ² April 2008	Brown Patch ³ 2008 Avg.	Dollar Spot ³ 2008 Avg.	Copper Spot ³ 2008 Avg.
		2007-2008 Avg.	2007 Avg.	2008 Avg.				
1 TDN2 Comp	Creeping	6.3	7.4	5.2	7.7	5.2	7.2	4.0
2 OO7	Creeping	6.2	6.6	5.7	7.3	6.3	7.2	3.8
3 RH 12-34	Creeping	6.1	6.2	6.0	4.3	5.3	7.4	5.2
4 95-S	Creeping	6.1	6.7	5.4	7.0	5.8	7.0	3.2
5 9058 - 1-4	Creeping	6.1	6.6	5.5	6.3	5.0	6.3	4.8
6 IS-AP-15	Creeping	6.0	6.6	5.5	5.7	5.5	6.3	2.5
7 95-N	Creeping	6.0	6.7	5.2	7.0	6.3	8.1	2.8
8 PST-Syn-0JO	Creeping	5.9	6.7	5.1	8.0	5.7	5.9	3.5
9 Shark	Creeping	5.9	6.7	5.2	6.3	4.8	6.5	3.0
10 PST-0JD Bulk	Creeping	5.8	6.0	5.6	6.3	7.2	5.8	6.0
11 GMC Comp	Creeping	5.8	6.3	5.3	6.3	3.5	8.3	3.8
12 AFM Comp	Creeping	5.8	5.8	5.8	7.0	4.8	6.7	5.3
13 Runner	Creeping	5.7	6.3	5.1	7.3	6.7	5.3	3.5
14 Authority	Creeping	5.7	6.6	4.8	6.7	4.3	7.7	3.5
15 RH 1-5	Creeping	5.7	5.4	6.0	7.0	5.3	6.2	7.3
16 TDN1 Comp	Creeping	5.7	6.0	5.3	7.3	6.0	7.7	5.0
17 9002 - 1-3	Creeping	5.6	6.0	5.3	5.0	6.5	8.6	4.5
18 GEC Comp	Creeping	5.6	6.2	4.9	5.7	4.7	8.0	3.2
19 RH 931	Creeping	5.5	6.2	4.9	6.3	4.2	5.5	4.7
20 Tye / SR 7200	Cr. Blend	5.5	5.7	5.5	6.3	5.8	7.1	3.0
21 Tye	Creeping	5.5	5.7	5.4	7.7	5.8	5.5	4.7
22 9039	Creeping	5.5	5.2	5.9	5.7	5.0	8.3	6.8
23 Tye / OO7	Creeping	5.5	5.6	5.4	7.3	4.5	6.7	3.7
24 9012 - 4-6	Creeping	5.5	5.7	5.2	6.0	5.7	7.7	3.8
25 OO7 / SR 1150	Creeping	5.5	5.9	5.0	7.7	5.8	6.7	5.3

(Continued)

Table 4 (continued).

	Cultivar or Selection	Species	-----Turf Quality ¹ -----			Spring Green-up ² April 2008	Brown Patch ³ 2008 Avg.	Dollar Spot ³ 2008 Avg.	Copper Spot ³ 2008 Avg.
			2007-2008 Avg.	2007 Avg.	2008 Avg.				
	26 RH 8-4	Creeping	5.5	5.7	5.2	6.3	5.7	5.7	6.2
	27 9085 - 1-5	Creeping	5.4	5.6	5.2	4.7	5.7	7.2	6.5
	28 9014 - 4-6	Creeping	5.3	5.9	4.7	6.0	5.3	7.8	4.0
	29 OO7 / Mackenzie	Creeping	5.2	5.4	5.1	6.3	7.2	5.9	3.7
	30 OO7 / Mackenzie / Tye	Creeping	5.2	5.9	4.5	7.0	6.0	5.3	3.5
	31 LEB Comp	Colonial	5.2	5.0	5.3	5.3	4.0	8.3	8.8
	32 FEC Comp	Creeping	5.2	5.4	4.9	5.7	4.5	8.6	4.0
	33 9014 - 1-3	Creeping	5.1	5.5	4.7	4.3	5.0	7.1	4.7
19	34 95-TC	Creeping	5.1	5.0	5.1	6.3	5.8	5.9	3.8
	35 SRX 1WM	Creeping	5.0	5.1	4.8	6.0	7.0	7.0	4.3
	36 9034 - 1-6	Creeping	5.0	4.9	5.0	6.7	4.7	8.6	4.2
	37 Declaration	Creeping	5.0	5.4	4.5	7.0	6.8	8.0	2.2
	38 Independence	Creeping	5.0	5.7	4.2	5.3	4.5	5.1	3.3
	39 9020 - 1-3	Creeping	4.9	5.2	4.5	4.0	4.5	7.4	5.2
	40 Benchmark	Creeping	4.9	5.4	4.3	5.3	6.2	7.8	6.8
	41 9008 - 1-3	Creeping	4.8	4.8	4.8	2.7	5.8	7.0	5.0
	42 LMC Comp	Colonial	4.8	5.0	4.6	3.7	3.3	8.6	8.0
	43 OO7 / SR 1119	Creeping	4.8	4.9	4.7	6.0	6.2	6.6	3.5
	44 Ninety-Six Two / Mackenzie	Creeping	4.7	4.9	4.4	6.0	4.7	4.7	4.7
	45 Mackenzie / Sandhill	Creeping	4.6	4.8	4.4	6.3	6.2	5.6	3.5

(Continued)

Table 4 (continued).

	Cultivar or Selection	Species	-----Turf Quality ¹ -----			Spring Green-up ² April 2008	Brown Patch ³ 2008 Avg.	Dollar Spot ³ 2008 Avg.	Copper Spot ³ 2008 Avg.
			2007-2008 Avg.	2007 Avg.	2008 Avg.				
46	9020 - 4-6	Creeping	4.6	5.0	4.3	4.7	3.7	6.2	4.0
47	Mackenzie	Creeping	4.6	5.1	4.1	7.0	5.8	5.1	2.7
48	Cobra 2	Creeping	4.6	4.8	4.3	2.3	5.2	7.7	3.2
49	Penneagle II	Creeping	4.4	4.1	4.7	5.0	7.3	7.4	4.3
50	Penn A-4	Creeping	4.4	4.6	4.3	6.0	3.2	6.0	4.3
51	T-1	Creeping	4.4	4.8	3.9	4.3	5.2	6.2	8.0
52	Ninety-Six Two	Creeping	4.3	4.5	4.2	5.0	5.8	4.1	5.0
53	9021 - 1-3	Creeping	4.3	4.7	4.0	3.3	5.2	7.7	3.5
54	SR 1150	Creeping	4.3	4.7	3.9	7.3	6.7	6.9	4.5
55	Ninety-Six Two / Sandhill	Creeping	4.3	4.8	3.8	6.0	4.8	4.4	4.5
56	Alpha	Creeping	4.3	4.3	4.1	4.3	6.2	5.0	6.7
57	KingPin	Creeping	4.3	4.1	4.3	6.7	6.3	8.0	6.2
58	9027 - 4-6	Creeping	4.3	4.1	4.4	4.3	4.3	8.1	5.2
59	9009 - 4-6	Creeping	4.2	4.0	4.5	3.0	7.0	8.5	5.7
60	SR 1150 / SR 1119	Creeping	4.1	4.2	4.0	4.7	6.8	6.3	4.7
61	Mackenzie / Penn G-1	Creeping	4.1	4.0	4.2	5.0	4.3	7.5	4.8
62	Penn G-1	Creeping	4.0	3.8	4.3	5.3	5.2	6.3	5.3
63	9328 - 1-3,5	Colonial	4.0	3.6	4.4	4.3	5.3	8.1	7.0
64	95-W	Creeping	4.0	3.8	4.1	4.7	6.8	6.2	5.3
65	Southshore	Creeping	4.0	3.8	4.1	3.7	4.8	5.8	6.0
66	Penncross	Creeping	3.9	3.7	4.2	4.3	4.3	6.1	4.3
67	DEB Comp	Colonial	3.9	4.1	3.6	4.0	2.2	8.9	8.5
68	9313 - 10-12	Colonial	3.9	4.2	3.6	3.0	2.3	8.8	8.0
69	L-93	Creeping	3.8	3.1	4.6	3.7	6.0	7.9	5.8
70	Imperial	Creeping	3.8	4.1	3.5	3.0	4.8	4.2	4.7

(Continued)

Table 4 (continued).

	Cultivar or Selection	Species	-----Turf Quality ¹ -----			Spring Green-up ² April 2008	Brown Patch ³ 2008 Avg.	Dollar Spot ³ 2008 Avg.	Copper Spot ³ 2008 Avg.
			2007-2008 Avg.	2007 Avg.	2008 Avg.				
71	9314 - 6-12	Colonial	3.8	3.5	4.0	2.7	3.0	8.7	8.2
72	Sandhill	Creeping	3.7	3.4	4.1	4.3	5.8	6.0	4.5
73	Backspin	Creeping	3.7	3.6	3.8	5.3	5.7	5.8	6.0
74	DMB Comp	Colonial	3.6	4.0	3.2	2.3	3.3	8.1	6.2
75	SR 1119	Creeping	3.5	3.3	3.6	4.7	7.3	5.6	4.7
76	Century	Creeping	3.5	3.3	3.7	2.7	6.2	5.3	5.2
77	Pennlinks II	Creeping	3.3	3.4	3.1	2.7	6.7	7.6	5.3
78	DBN Comp	Colonial	3.3	3.5	3.1	2.3	2.5	8.6	7.3
79	9355 - 6	Colonial	3.3	3.8	2.8	3.0	3.3	8.0	8.5
80	Putter	Creeping	3.2	2.8	3.6	3.0	5.7	6.0	5.0
81	9316 - 2,3,5	Colonial	3.2	3.4	3.0	1.7	3.5	8.1	7.5
82	PST-0166 Bulk	Creeping	3.2	2.7	3.7	2.3	7.0	6.9	4.8
83	Tiger II	Colonial	3.1	3.2	2.9	1.3	3.5	8.5	7.3
84	Providence	Creeping	3.1	2.8	3.3	3.7	7.7	5.8	4.3
85	Brighton	Creeping	3.1	2.8	3.3	2.7	7.0	6.7	6.0
86	9327 - 1-6	Colonial	3.0	2.9	3.0	3.0	4.8	8.3	6.5
87	9310 - 1-6	Colonial	2.9	2.9	2.9	2.7	2.7	8.6	7.7
88	Brighton / Sandhill	Creeping	2.7	2.3	3.1	2.3	6.5	5.7	5.5
89	SR 7100	Colonial	2.7	2.3	3.0	3.3	2.8	8.4	7.3
90	9343 - 6	Colonial	2.6	2.5	2.7	2.0	3.3	8.7	8.0
LSD at 5% =			0.7	0.9	0.8	1.4	2.2	1.3	1.9

¹9 = best turf quality²9 = earliest spring green-up³9 = least disease (average of 2, 3, and 2 ratings for brown patch, dollar spot, and copper spot, respectively)

Table 5. Performance of velvet bentgrass cultivars and selections in a putting green trial seeded in September 2006 at North Brunswick, NJ.

Cultivar or Selection	-----Turf Quality ¹ -----			Spring Green-up ² April 2008	Copper Spot ³ 2008 Avg.
	2007-2008 Avg.	2007 Avg.	2008 Avg.		
1 Legendary	6.2	5.9	6.6	7.3	6.0
2 DDV Comp	6.2	6.3	6.2	7.3	5.3
3 Villa	5.9	6.5	5.5	8.0	3.5
4 IS-AC-4	5.8	5.8	5.8	7.3	4.3
5 SMV Comp	5.5	5.7	5.3	5.0	4.2
6 DCV Comp	5.2	4.9	5.6	3.0	5.3
7 9154 - 6-12 H04TP 179-11	5.0	5.3	4.8	5.3	5.3
8 Vesper	4.9	4.3	5.6	5.3	5.8
9 Greenwich	4.8	4.9	4.7	5.7	4.3
10 Venus	4.5	4.0	4.9	5.0	5.5
11 9152 - 6-12 H04TP 276-12	4.4	3.7	5.1	3.3	6.2
12 9155 - 6-12 H04TP 178-10	4.4	4.6	4.2	4.7	5.0
13 9157 - 7-12 H04TP 179-7	4.3	4.0	4.5	5.3	4.2
14 9145 - 1-5 H04TP 187-6	3.7	3.1	4.3	6.3	6.2
15 SR 7200	3.4	3.3	3.5	6.7	5.0
LSD at 5% =	1.0	1.2	1.0	2.2	0.9

¹9 = best turf quality

³9 = earliest spring green-up

³9 = least disease (average of two ratings)

Table 6. Performance of creeping and colonial bentgrass cultivars and selections in a fairway trial seeded in September 2006 at North Brunswick, NJ.

Cultivar or Selection	Species	-----Turf Quality ¹ -----			Brown Patch ² 2008 Avg.	Dollar Spot ² 2008 Avg.
		2007- 2008 Avg.	2007 Avg.	2008 Avg.		
1 FEC Comp	Creeping	6.6	7.0	6.1	8.7	7.8
2 LEB Comp	Colonial	6.5	6.0	7.0	7.0	9.0
3 Tye / OO7	Creeping	6.4	6.7	6.1	8.7	6.7
4 GMC Comp	Creeping	6.4	6.6	6.1	9.0	8.3
5 Tye / SR 7200	Creeping	6.1	5.9	6.3	8.3	7.5
6 SRX 1WM Comp	Creeping	6.0	6.2	5.9	9.0	6.8
7 Authority	Creeping	6.0	6.0	5.9	8.7	4.7
8 DEB Comp	Colonial	6.0	5.9	6.1	6.3	8.8
9 OO7	Creeping	6.0	6.3	5.6	9.0	6.7
10 LMC Comp	Colonial	5.9	6.0	5.9	5.0	7.3
11 9034 - 1-6	Creeping	5.9	5.6	6.2	8.7	8.5
12 9039	Creeping	5.9	5.7	6.0	6.3	8.5
13 SR 1150	Creeping	5.8	6.0	5.7	7.7	6.3
14 Tye	Creeping	5.8	5.7	5.8	9.0	5.5
15 9314 - 6-12	Colonial	5.7	5.8	5.6	4.3	8.5
16 GEC Comp	Creeping	5.7	6.2	5.2	8.3	6.8
17 9312 - 10-12	Colonial	5.6	5.3	6.0	5.3	9.0
18 9330 - 7-9	Colonial	5.6	5.7	5.5	4.7	8.0
19 Declaration	Creeping	5.6	6.3	4.9	8.7	9.0
20 OO7 / SR 1150	Creeping	5.6	5.9	5.2	8.0	6.5
21 AFM Comp	Creeping	5.5	5.2	5.8	8.3	5.8
22 DBN Comp	Colonial	5.5	5.8	5.2	5.0	8.2
23 DMB Comp	Colonial	5.5	5.7	5.3	3.0	8.2
24 Runner	Creeping	5.5	5.6	5.3	8.0	5.5
25 SR 1150 / SR 1119	Creeping	5.4	5.6	5.2	7.7	6.0

(Continued)

Table 6 (continued).

	Cultivar or Selection	Species	-----Turf Quality ¹ -----			Brown Patch ² 2008 Avg.	Dollar Spot ² 2008 Avg.
			2007- 2008 Avg.	2007 Avg.	2008 Avg.		
26	OO7 / SR 1119	Creeping	5.4	5.2	5.6	8.7	6.0
27	OO7 / Mackenzie / Tye	Creeping	5.3	5.2	5.5	8.3	5.5
28	Shark	Creeping	5.3	5.4	5.2	9.0	4.3
29	9316 - 2,3,5	Colonial	5.3	5.1	5.5	3.0	8.5
30	9328 - 1-3,5	Colonial	5.3	5.1	5.4	6.0	8.2
31	Penn A-1	Creeping	5.2	5.3	5.2	7.7	5.2
32	RH 931	Creeping	5.1	5.0	5.3	8.7	4.8
33	9313 - 10-12	Colonial	5.1	4.9	5.1	3.7	8.7
34	PST-Syn-0JO	Creeping	5.1	4.8	5.3	9.0	4.3
35	T-1	Creeping	5.0	4.7	5.3	8.7	4.2
36	9014 - 1-3	Creeping	5.0	4.7	5.4	7.7	6.0
37	Cobra 2	Creeping	5.0	5.3	4.6	7.7	5.8
38	KingPin	Creeping	5.0	4.8	5.0	7.3	7.3
39	Mackenzie / Penn G-1	Creeping	4.9	5.1	4.8	7.3	5.0
40	OO7 / Mackenzie	Creeping	4.9	4.9	5.0	9.0	6.0
41	Ninety-Six Two / Sandhill	Creeping	4.8	5.2	4.5	7.3	3.5
42	SRX 7CRCO	Colonial	4.8	5.0	4.6	3.7	7.7
43	Penn G-1	Creeping	4.8	4.9	4.7	8.7	4.3
44	Benchmark	Creeping	4.8	5.0	4.7	8.0	7.5
45	Tiger II	Colonial	4.8	5.1	4.5	2.3	7.5
46	9327 - 1-6	Colonial	4.8	4.9	4.6	3.3	9.0
47	9333 - 6-10	Colonial	4.8	4.8	4.7	5.3	9.0
48	SR 7100	Colonial	4.7	4.8	4.7	2.7	6.3
49	9319 - 8-10	Colonial	4.7	4.5	5.0	5.3	8.5
50	Independence	Creeping	4.7	4.9	4.6	8.7	4.0

(Continued)

Table 6 (continued).

Cultivar or Selection	Species	-----Turf Quality ¹ -----			Brown Patch ² 2008 Avg.	Dollar Spot ² 2008 Avg.
		2007- 2008 Avg.	2007 Avg.	2008 Avg.		
51 Penn A-4	Creeping	4.7	5.4	4.0	8.3	3.2
52 9343-6	Colonial	4.6	4.7	4.6	3.7	8.3
53 9355-6	Colonial	4.6	5.1	4.1	3.3	7.2
54 L-93	Creeping	4.6	4.3	4.8	8.7	6.2
55 SR 1CCR2	Creeping	4.6	4.3	4.9	5.0	7.5
56 Mackenzie / Sandhill	Creeping	4.6	4.9	4.2	7.7	5.2
57 9310 - 1-6	Colonial	4.5	4.5	4.5	4.0	7.8
58 Ninety-Six Two	Creeping	4.5	4.3	4.7	8.0	3.3
59 Mackenzie	Creeping	4.5	4.5	4.5	8.3	3.2
60 Putter	Creeping	4.4	4.4	4.4	7.3	2.3
61 Alpha	Creeping	4.4	4.4	4.5	8.7	3.5
62 SR 1119	Creeping	4.3	4.3	4.2	9.0	3.5
63 Brighton	Creeping	4.3	4.4	4.2	6.7	5.0
64 Penn G-2	Creeping	4.3	4.3	4.2	8.0	2.8
65 Glory	Colonial	4.2	4.2	4.3	4.0	6.0
66 9307 - 10-12	Colonial	4.2	4.1	4.3	3.7	8.5
67 Ninety-Six Two / Mackenzie	Creeping	4.2	4.2	4.2	8.0	3.5
68 Imperial	Creeping	4.2	4.2	4.3	6.7	2.3
69 9027 - 4-6	Creeping	4.2	4.3	4.1	5.7	7.5
70 SRX 7EE	Colonial	4.1	3.9	4.3	3.3	8.2
71 Sandhill	Creeping	4.1	4.1	4.1	8.0	6.0
72 Southshore	Creeping	4.1	3.8	4.3	7.3	3.8
73 Penn G-6	Creeping	4.0	3.8	4.2	7.3	2.5
74 Backspin	Creeping	4.0	4.3	3.6	8.7	1.5
75 Penncross	Creeping	3.8	3.9	3.8	8.3	2.7

(Continued)

Table 6 (continued).

Cultivar or Selection	Species	-----Turf Quality ¹ -----			Brown Patch ² 2008 Avg.	Dollar Spot ² 2008 Avg.
		2007- 2008 Avg.	2007 Avg.	2008 Avg.		
76 Brighton / Sandhill	Creeping	3.7	3.5	4.0	6.0	5.8
77 SR 7150	Colonial	3.7	3.4	4.0	1.7	6.2
78 Century	Creeping	3.7	3.4	4.0	4.7	4.5
79 Providence	Creeping	3.6	3.6	3.5	6.3	5.3
80 Seaside II	Creeping	3.4	3.3	3.5	5.3	5.3
LSD at 5% =		0.7	0.9	0.9	1.8	1.6

¹9 = best turf quality

²9 = least disease (average of two ratings)

Table 7. Performance of bentgrass cultivars and selections in a putting green trial trial seeded in September 2007 at North Brunswick, NJ.

Cultivar or Selection	Species	Turf Quality ¹ 2008	Brown Patch ² July 2008	Copper Spot ² July 2008	Dollar Spot ² Sept. 2008
1 TDN2 Comp	Creeping	7.4	7.0	6.7	7.0
2 Legendary	Velvet	6.8	5.7	5.7	8.0
3 IS-AC 4	Velvet	6.7	6.0	5.3	9.0
4 DC1 Comp	Creeping	6.7	6.0	6.0	7.0
5 SRX1WM	Creeping	6.5	6.3	5.0	6.3
6 FAC Comp	Creeping	6.5	5.7	5.0	7.3
7 Villa	Velvet	6.4	5.3	4.7	8.3
8 Declaration	Creeping	6.3	4.7	6.0	7.7
9 Vesper	Velvet	6.2	5.3	5.0	7.7
10 IS-AP 15	Creeping	6.0	5.3	6.7	5.3
11 RH 13-4	Creeping	5.9	5.3	7.7	4.7
12 Greenwich	Velvet	5.9	4.7	4.0	8.7
13 PC2 Comp	Velvet	5.8	6.0	5.7	8.0
14 CY-2	Creeping	5.8	4.7	5.3	5.7
15 PC4 Comp	Velvet	5.7	6.3	6.0	8.0
16 Shark	Creeping	5.7	6.3	6.7	4.7
17 Benchmark DSR	Creeping	5.7	5.0	6.7	8.0
18 PRO AS-1 HTM	Creeping	5.6	5.7	4.3	4.0
19 RH 3-4	Creeping	5.6	5.0	7.3	5.3
20 OO7	Creeping	5.6	4.3	4.0	6.0
21 OO7/SR 1150/Tyee	Creeping	5.6	5.3	6.3	5.3
22 OO7/Mackenzie/Tyee	Creeping	5.6	4.3	4.7	5.0
23 SR 7200	Velvet	5.5	5.0	3.7	8.3
24 Memorial	Creeping	5.5	4.0	4.7	7.3
25 PC3 Comp	Velvet	5.5	5.3	5.7	7.7

(Continued)

Table 7 (continued).

Cultivar or Selection	Species	Turf Quality ¹ 2008	Brown Patch ² July 2008	Copper Spot ² July 2008	Dollar Spot ² Sept. 2008
26 Runner	Creeping	5.4	6.7	7.3	3.3
27 RH 12-8	Creeping	5.3	4.7	5.3	3.0
28 Kingpin	Creeping	5.2	5.0	6.0	7.0
29 Cobra 2	Creeping	5.2	5.0	5.7	5.0
30 OO7/SR 1150/Mackenzie	Creeping	5.1	4.0	5.3	4.3
31 RH 5-24	Creeping	5.0	4.7	5.0	3.7
32 MGD Comp	Colonial	5.0	4.3	7.3	7.3
33 PC1 Comp	Velvet	4.9	5.7	5.7	8.3
34 Pennlinks II/Penneagle II	Creeping	4.8	3.3	5.3	4.7
35 Tyee	Creeping	4.8	5.3	4.0	3.7
36 SR 1150	Creeping	4.7	5.3	4.0	5.7
37 Penn G-1	Creeping	4.7	3.3	3.7	5.0
38 Penneagle II	Creeping	4.7	4.3	6.0	4.3
39 DSH Comp	Colonial	4.7	4.7	7.3	8.0
40 T-1	Creeping	4.6	5.0	5.0	4.0
41 LS-44	Creeping	4.6	4.3	4.7	4.3
42 Penn A-4	Creeping	4.4	4.0	5.7	3.0
43 Mackenzie/Tyee	Creeping	4.4	4.7	4.7	4.3
44 DGD Comp	Colonial	4.4	3.7	6.7	6.3
45 Mackenzie	Creeping	4.4	4.0	4.0	3.0
46 Independence	Creeping	4.3	5.0	6.0	2.0
47 L-93	Creeping	4.2	3.7	5.0	6.0
48 LAA-134	Velvet	4.1	4.3	5.0	3.7
49 TDN1 Comp	Creeping	4.0	2.7	3.0	5.7
50 PRO AT-1 BCD	Colonial	4.0	3.3	7.0	7.0

(Continued)

Table 7 (continued).

Cultivar or Selection	Species	Turf Quality ¹ 2008	Brown Patch ² July 2008	Copper Spot ² July 2008	Dollar Spot ² Sept. 2008
51 Nintey-Six Two	Creeping	4.0	4.0	5.3	2.7
52 EBM - FTO	Colonial	4.0	3.0	6.5	7.7
53 SR 1150/SR 1119	Creeping	3.9	3.7	4.7	4.7
54 Sandhill	Creeping	3.8	4.0	4.7	4.0
55 Alister	Colonial	3.7	1.7	7.0	6.7
56 SR 1119	Creeping	3.6	3.3	4.3	3.3
57 Southshore	Creeping	3.5	3.3	4.7	4.7
58 Providence	Creeping	3.2	2.3	5.3	4.3
59 Brighton	Creeping	3.0	3.0	3.3	4.0
60 Alpha	Creeping	2.9	3.7	4.3	3.7
61 PCC Comp	Colonial	2.9	1.3	5.5	7.0
LSD at 5% =		1.7	2.2	1.7	0.7

¹9 = best turf quality

²9 = least disease

Table 8. Performance of creeping and colonial bentgrass cultivars and selections in a fairway/tee trial seeded in September 2007 at North Brunswick, NJ.

Cultivar or Selection	Species	Turf Quality ¹ 2008	Dollar Spot ² 2008	Brown Patch ³ 2008
1 TDN2 Comp	Creeping	6.9	7.0	8.4
2 007	Creeping	6.4	6.3	7.6
3 PRO AS-1 HTM	Creeping	6.2	6.7	7.6
4 SRX1WM	Creeping	6.1	7.0	7.4
5 Declaration	Creeping	6.0	7.3	6.5
6 FAC Comp	Creeping	5.9	7.3	7.5
7 007/SR 1150/Mackenzie	Creeping	5.9	5.3	6.4
8 IS-AP 15	Creeping	5.9	4.7	7.6
9 RH 3-4	Creeping	5.8	6.0	6.5
10 007/SR 1150/Tyee	Creeping	5.6	5.3	6.4
11 Benchmark DSR	Creeping	5.6	7.3	5.4
12 CY-2	Creeping	5.6	6.7	5.2
13 13M	Creeping	5.5	7.7	6.6
14 RH 5-24	Creeping	5.5	5.0	6.6
15 Memorial	Creeping	5.5	8.0	5.1
16 Cobra 2	Creeping	5.5	5.0	5.5
17 MGD Comp	Colonial	5.5	8.0	5.9
18 DSH Comp	Colonial	5.4	8.3	6.1
19 Shark	Creeping	5.3	4.0	7.7
20 Kingpin	Creeping	5.3	7.3	4.8
21 007/Mackenzie/Tyee	Creeping	5.3	4.7	6.1
22 Independence	Creeping	5.2	3.7	6.7
23 Tyee	Creeping	5.2	5.0	6.4
24 RH 12-8	Creeping	5.2	4.0	7.1
25 Penn A-1	Creeping	5.2	5.3	5.5
26 DGD Comp	Colonial	5.2	8.7	5.2
27 SR 1150	Creeping	5.1	6.0	7.3
28 PST-Syn-9DTM	Colonial	5.1	8.0	5.4
29 Pennlinks II/Penneagle II	Creeping	5.1	5.0	6.7
30 Mackenzie/Tyee	Creeping	5.1	3.7	5.8
31 Sandhill	Creeping	5.0	5.3	6.1
32 SR 1150/SR 1119	Creeping	5.0	5.0	5.5
33 RH 13-4	Creeping	5.0	5.3	6.3
34 IS-AT 8	Colonial	5.0	9.0	4.8
35 Runner	Creeping	4.9	4.3	6.8

(Continued)

Table 8 (continued).

Cultivar or Selection	Species	Turf Quality ¹ 2008	Dollar Spot ² 2008	Brown Patch ³ 2008
36 LS-44	Creeping	4.8	5.3	5.4
37 PST-Syn-9HO	Colonial	4.8	8.0	4.4
38 Penn A-4	Creeping	4.8	3.7	6.1
39 Penneagle II	Creeping	4.8	6.0	6.0
40 Penn G-1	Creeping	4.8	3.7	6.1
41 T-1	Creeping	4.8	5.0	5.4
42 TDN1 Comp	Creeping	4.8	7.0	4.1
43 EBM - FTO	Colonial	4.7	8.7	4.5
44 PCC Comp	Colonial	4.6	9.0	5.3
45 SRX1CRCO	Colonial	4.4	4.3	7.4
46 Glory	Colonial	4.4	8.7	3.5
47 PST-Syn-9DTE	Colonial	4.3	8.0	3.2
48 L-93	Creeping	4.3	7.3	4.5
49 Tiger II	Colonial	4.3	9.0	3.2
50 Ninety-Six Two	Creeping	4.2	2.0	6.5
51 Mackenzie	Creeping	4.2	3.3	5.1
52 SR 1119	Creeping	4.2	3.7	5.3
53 PST-9BNC	Colonial	4.2	8.3	2.6
54 PRO AT-1 BCD	Colonial	4.2	8.7	4.1
55 Southshore	Creeping	4.2	4.7	4.9
56 Alister	Colonial	4.1	8.3	2.5
57 Alpha	Creeping	4.0	4.7	4.8
58 SR 7100	Colonial	3.8	9.0	3.2
59 Brighton	Creeping	3.7	6.3	3.3
60 Providence	Creeping	3.6	7.3	3.4
61 Penncross	Creeping	3.6	6.7	4.5
62 PST-OETD Bulk	Creeping	3.6	4.7	7.3
63 SRX7EE	Colonial	3.6	8.0	3.1
64 SR 7150	Colonial	3.5	8.7	2.0
65 PST-OLTD Bulk	Creeping	3.0	4.5	6.8
LSD at 5% =		0.8	1.5	1.3

¹9 = best turf quality²9 = least disease³9 = least disease (brown patch), reported as an average of four ratings

Table 9. Maintenance practices performed in 2008 on bentgrass trials at North Brunswick, NJ.

Table	Test	Fertility ¹	Mowing Height (inches)	Cultivation/Top Dress	Fungicides	Insecticides	Herbicides
1	2004 Greens	0.65	1/8	None	June/July/Aug.–Curalan; May/June/July–Emerald; June/July/Aug.–Prostar 70WP	July–Talstar (cutworms)	May/June–Dimension (pre-emergence weeds)
2	2004 Fairway/ Tee	2.15	3/8	None	May–Emerald; June–Spectro 90; July–Daconil Ultrex; Aug.–Curalan/Medallion	July–Talstar (cutworms)	May–Dimension (pre-emergence weeds); April–Trimec Bent (broad-leaf weeds)
3	2005 Fairway/ Tee	1.95	3/8	None	May–Emerald; June–Spectro 90; July–Daconil Ultrex; Aug.–Curalan/Medallion	July–Talstar (cutworms)	May–Dimension (pre-emergence weeds); April–Trimec Bent (broad-leaf weeds)
4	2006 Greens	3.71	1/8	None	July–Prostar/Junction; Aug./Sept.–Daconil Ultrex; Oct.–Curalan; Nov.–Emerald/Insignia	July–Talstar (cutworms)	May/June–Dimension (pre-emergence weeds)
5	2006 Velvet	3.36	1/8	None	July–Prostar/Junction; Aug./Sept.–Daconil Ultrex; Oct.–Curalan; Nov.–Emerald/Insignia	July–Talstar (cutworms)	May/June–Dimension (pre-emergence weeds)

Table 9 (continued).

Table	Test	Fertility ¹	Mowing Height (inches)	Cultivation/ Top Dress	Fungicides	Insecticides	Herbicides
6	2006 Fairway	3.36	3/8	None	July/Nov.–Emerald; Aug./Sept.–Daconil Ultrex; Sept.–Banner Maxx; Oct.–Curalan; Nov.–Insignia	July–Talstar (cut-worms)	May/June–Dimension (pre-emergence weeds); April/Aug.–Trimec Bent (broadleaf weeds)
7	2007 Greens	4.81	1/8	None	Sept.–Spectro 90; Oct.–Curalan; Nov.–Emerald/Insignia	July–Talstar (cut-worms)	May/June–Dimension (pre-emergence weeds); April–Trimec Bent (broad-leaf weeds)
8	2007 Fairway/ Tee	4.78	3/8	None	Aug.–Daconil Ultrex; Oct.–Curalan; Nov.–Emerald/Insignia	July–Talstar (cut-worms)	May/June–Dimension (pre-emergence weeds); April/Aug.–Trimec Bent (broadleaf weeds)

¹Annual nitrogen applied (lb/1000 ft²)



Cooperating Agencies: Rutgers, The State University of New Jersey, U.S. Department of Agriculture, and County Boards of Chosen Freeholders. Rutgers Cooperative Extension, a unit of the Rutgers New Jersey Agricultural Experiment Station, is an equal opportunity program provider and employer.