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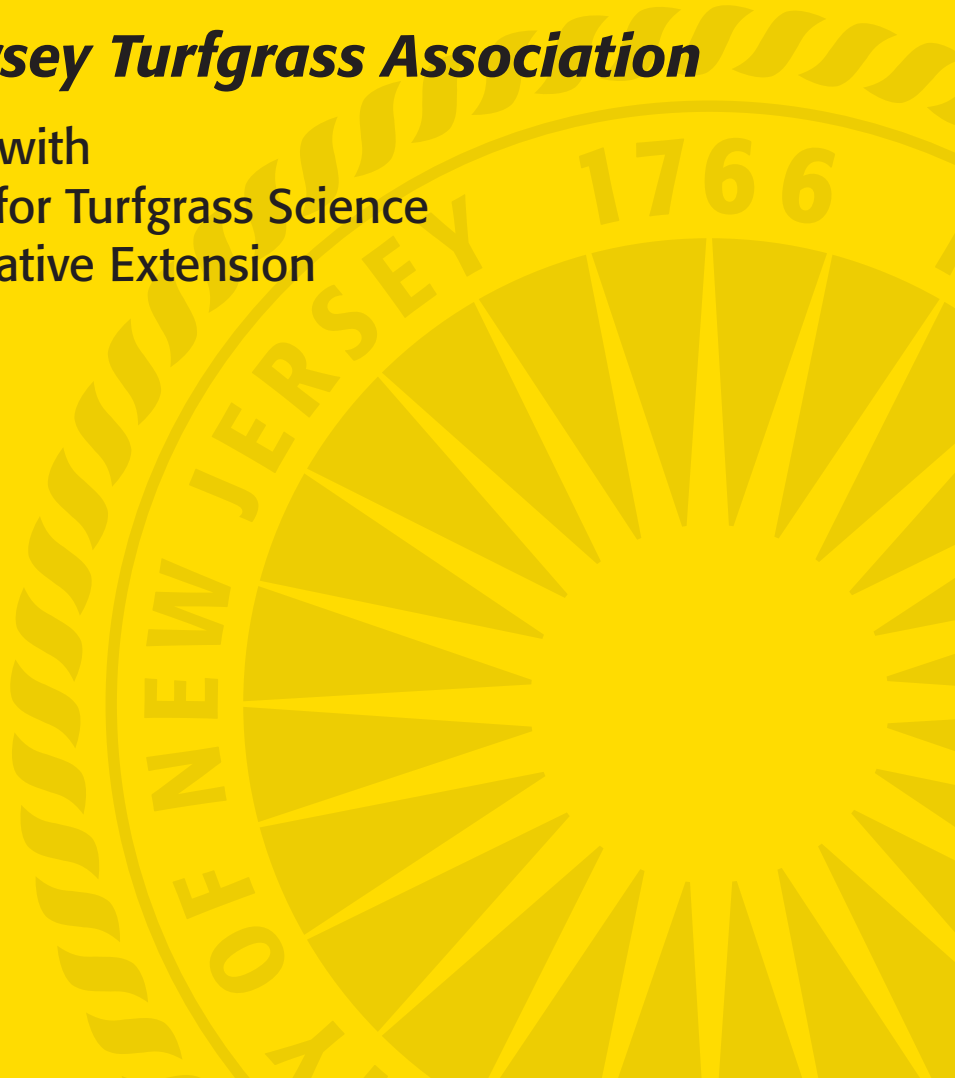

2008 RUTGERS TURFGRASS PROCEEDINGS

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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 available 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 PERENNIAL RYEGRASS CULTIVARS AND SELECTIONS IN NEW JERSEY TURF TRIALS

Matthew J. Koch, Melissa M. Wilson, William A. Meyer, C. Reed Funk, Stacy A. Bonos, Ronald F. Bara, William K. Dickson, Dirk A. Smith, Jonathan M. Bokmeyer, and Eugeniusz Szerszen[1]

Perennial ryegrass (*Lolium perenne* L.) is a cool-season, bunch type grass that performs well in a wide variety of soil conditions but does best in dark fertile soils with a pH between 5 and 8 (Peterson, 2002). Perennial ryegrass prefers to be planted in full sun but will tolerate light shade. To help prevent soil erosion during lawn establishment, the grass is often planted in mixtures with species that germinate more slowly, such as Kentucky bluegrass (*Poa pratensis* L.) and the fine fescues (*Festuca* spp.). Since perennial ryegrass does not tolerate hot climates and will die off in the summer, the grass is perfectly suited for overseeding winter dormant lawns and athletic facilities in the southern United States. The development of improved perennial ryegrass cultivars continues at the New Jersey Agricultural Experiment Station as well as other research facilities.

The center of origin for perennial ryegrass includes Europe, North Africa, and parts of Asia. The Rutgers turfgrass breeding program travels internationally in an effort to acquire new sources of germplasm, some of which contains the *Neotyphodium lolii* endophyte. Endophytes are naturally occurring fungi that live symbiotically within the leaf, sheath, and stem tissues of certain grasses and are transmitted to succeeding generations through seed. Many perennial ryegrasses with this endophyte have enhanced tolerance to biotic and abiotic stresses (van Zijll de Jong et al., 2008) and are most notably resistant to insect feeding. The endophyte fungus also produces toxins, however, that can cause serious health problems in grazing livestock. Thus perennial ryegrasses, which as important pasture and forage grasses are included in many pasture seed mixes, should not be used in pasture situations when high levels of endophyte are present.

PROCEDURES

Six perennial ryegrass trials were established between 2004 and 2007. Five of the tests were seeded at the Rutgers Plant Biology and Pathology Research and Extension Farm at Adelphia, NJ (Tables 1, 3 to 6) and one test was seeded at the Rutgers Horticultural Research Farm II in North Brunswick, NJ (Table 2). The five Adelphia tests were hand sown with 0.88 oz of seed into 3 x 5 ft plots (3.7 lb seed/1000 ft^2). The North Brunswick test was hand sown with 2.1 oz seed into 3.5 x 5.5 ft plots (6.8 lb seed/1000 ft^2). All tests were arranged in a randomized complete block design with three replications, and plots had a 6-inch unseeded border to limit contamination.

A spring application of Dimension was used to control crabgrass on all tests in Tables 1, 3, and 4. The 2005 and 2006 Adelphia tests (Tables 3 and 4) were also sprayed with the postemergence herbicides 2-4-D, Banvel, and MCPP for broadleaf weed control in May. In August, tests reported in Tables 1, 3, and 4 were sprayed with Dimension for control of annual bluegrass (*Poa annua* L.). All Adelphia trials (Tables 1, 3 to 6) were sprayed in early November with 2-4-D, Banvel and MCPP for postemergence broadleaf weed control. The North Brunswick test (Table 2) received a late April application of 2,4-D + Banvel for postemergent control of broadleaf weeds, and preemergence crabgrass control was applied as Dimension 40WP in late April and as Dimension 2E in late June. This test also received an early July application of Malice for grub control.

The annual rate of nitrogen and mowing height for each test is presented in Table 7. Single applications of fertilizer did not exceed 1.0 lb nitrogen/1000

[1]Graduate Assistant, Field Researcher IV, Research Professor, Research Professor, Assistant Professor, Principal Laboratory Technician, Turfgrass Research Farm Supervisor, Principal Laboratory Technician, Graduate Assistant, and Senior Greenhouse and Field Technician, respectively, New Jersey Agricultural Experiment Station, School of Environmental and Biological Sciences, Rutgers, The State University of New Jersey, New Brunswick, NJ 08901-8520.

ft^2. The amount and timing of nitrogen applied to the turf varied to encourage disease and other stresses. Tests were mowed regularly with reel mowers to maintain a 1.5-inch height of cut. Rotary mowers were occasionally used to remove reproductive tillers. Based on soil test results, tests were limed as needed to maintain a pH of 6.0 to 6.5. All tests were irrigated when necessary to avoid drought stress.

All tests were rated throughout the growing season for visual turf quality (i.e., overall appearance, turf color, uniformity, density, mowing quality, reduced rate of vertical growth, leaf texture, and damage due to insects and diseases). Other characteristics such as establishment, color, shoot density, leaf texture, wear recovery, and disease were rated when significant differences were evident. All ratings were based on a 1 to 9 scale, where 9 represented the best turf characteristic. Plots were evaluated by a number of turfgrass specialists to reduce the impact of personal bias for particular characteristics. All data were summarized and subjected to an analysis of variance. Means were separated using Fisher's protected least significant difference (LSD) mean separation test.

RESULTS and DISCUSSION

Results for all tests are presented in Tables 1 through 6. Entries in Tables 1 to 4 are ranked according to their overall (multi-year) quality average. Tests in Tables 5 and 6 are ranked by the average quality rating for 2008. A high quality average is generally indicative of better disease resistance, a darker, bright green color, higher shoot density and turf uniformity, finer leaf texture, lower growth habit, improved mowing quality, and less damage due to insects. Tables 1 and 2 include entries of the 2004 National Perennial Ryegrass test sponsored by the National Turfgrass Evaluation Program (NTEP).

Establishment

The results of the October establishment (%) rating in Table 6 indicates that most cultivars and selections were well established within 2 months of seeding. Seedling establishment and vigor can be affected by factors such as genetics, seed quality and storage, environmental conditions, after ripening dormancy, and management procedures. Perennial ryegrass is quick to establish, which helps to suppress weeds and prevent soil erosion. Cultivars Manhattan 5 GLR, Jet, and SR 4600 exhibited very good establishment, while this characteristic for 06-I LP and PST-2Max-07 was poor (Table 6).

Turf Quality

Perennial ryegrass has become a very popular species for home lawns, athletic fields, golf courses, and for overseeding purposes. Substantial improvements have been made on the overall turf quality of perennial ryegrass since the release of the first turf-type cultivars in the 1960s (Huff, 1997). Newer varieties such as All*Star 3, Derby Xtreme, SR4600, and Uno, as well as many promising experimental selections, were darker green, more uniform, denser with a lower growth habit, exhibit cleaner mowing, and are better tolerant of diseases, insects, and wear (Tables 1 to 6). Turf quality ratings for older cultivars such as Linn and Manhattan II were consistently low, indicating that vast improvements have been made to overall quality through breeding efforts.

Wear Tolerance

Perennial ryegrasses are very tolerant of wear and can recover rapidly from heavy traffic. As such, this turfgrass has become an increasingly popular choice for homeowners, sports turf managers, and golf course superintendents. The tests in Tables 2 and 3 were subjected to wear using a traffic simulator (Bonos et al. 2001) during the growing season and were rated for recovery from wear. Cultivars Keystone 2 and Primary as well as the experimental selection 2L4 Comp were very tolerant of wear; the performance of older cultivars, such as Linn, was poor.

Disease

Many newly developed perennial ryegrasses significantly differ in disease resistance and recovery. In New Jersey, excellent environmental conditions exist for development of diseases of perennial ryegrasses and other turf species. Diseases such as gray leaf spot (caused by *Pyricularia grisea*), red thread (caused by *Laetisaria fuciformis*), dollar spot (caused by *Sclerotinia homoeocarpa*), brown patch (caused by *Rhizoctonia solani*), and crown rust (caused by *Puccinia coronata*) commonly occur in the state. Of these, gray leaf spot is devastating to newly established stands of perennial ryegrass. The disease is favored when several hours of leaf wetness and/or high humidity as well as temperatures above 68°F are maintained. Gray leaf spot begins as small, gray

to brown leaf spots that progress into oblong, dark gray-brown or light brown lesions. Diseased leaves often appear off-color and wilted, and irregularly-shaped patches of turf develop in the stand (Bonos et al., 2006).

Breeders at the New Jersey Agricultural Experiment Station continue to develop cultivars with improved resistance to this disease. In August 2007, two perennial ryegrass tests were established at Adelphia, NJ (Tables 5 and 6) and were maintained to encourage the development of gray leaf spot. Increased resistance to this disease was evident in the experimental cultivars RKS Comp, OC2 Comp, ST1 Comp, GL-31, All*star 3, and APR2117 as well as the variety Dasher 3. Alternatively, the experimental selections SRX 45LUP, 07-7 PR, SR 45AB, and PST-2MAX-07 as well as the cultivar Goalkeeper II all proved to be very susceptible.

Crown rust is a common disease of perennial ryegrass that occurs most often in late summer and fall. Symptoms of the disease appear as orange to red pustules on the foliage. In 2007 tests established at Adelphia (Tables 5 and 6), significant differences in tolerance to crown rust were evident among cultivars. Newer varieties and experimentals such as OC2 Comp, All*Star 3, and PST-2MAGS were more resistant to the disease and recovered more quickly. Extreme, Caddieshack, SR 4350, Goalkeeper II, and MBH2, however, were susceptible.

Red thread gets its name from a pink-red, thread-like mycelium that occurs in the turf when the fungus is active. Red thread ratings in the 2004 test at North Brunswick (Table 2) indicate that resistance to the disease varied among cultivars. Although varieties such as Palace, Prototype, Pleasure Supreme, and Linn had improved resistance to this disease, Monterey 3 was the most susceptible. Red thread can usually be reduced by increases in nitrogen fertility.

SUMMARY

Turf type perennial ryegrass is one of the most versatile grasses available. High traffic tolerance, rapid establishment, and a deep green color are characteristics that raise the demand for use of perennial ryegrass on heavily trafficked athletic fields. Although considerable improvements have been made to this species, an increase in genetically stable resistance to gray leaf spot, crown rust, dollar spot, pink patch, red thread, and brown patch is still needed. In addition, increased heat and drought tolerance, cold hardiness, salinity tolerance, and the ability to survive under ice sheets for extended periods are also necessary.

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Table 1. Performance of perennial ryegrass cultivars and selections in a turf trial established in August 2004 at Adelphia, NJ. (Includes all entries of the 2004 National Turfgrass Evaluation Program (NTEP) Perennial Ryegrass Test.)

	Cultivar or Selection	Turf Quality[1] 2005-2008 Avg.	Turf Quality[1] 2005 Avg.	Turf Quality[1] 2006 Avg.	Turf Quality[1] 2007 Avg.	Turf Quality[1] 2008 Avg.	Color[2] Sept. 2008
1	GL4 Comp	6.8	7.3	6.5	6.4	7.1	7.7
2	All*Star 3	6.6	7.1	6.7	6.7	6.0	8.3
3	Uno	6.5	7.0	6.5	6.3	6.4	7.7
4	Derby Xtreme	6.5	6.5	6.8	5.8	6.8	8.0
5	Exacta II GLSR	6.5	7.1	6.5	6.1	6.1	7.3
6	Kokomo II	6.4	6.4	6.2	6.3	6.9	8.0
7	Palmer V	6.4	6.3	6.5	6.4	6.3	7.3
8	Stellar GL	6.3	6.5	6.4	6.3	6.1	8.0
9	Fiesta 4	6.3	7.0	6.2	5.5	6.5	7.3
10	Palmer IV	6.3	5.9	6.2	6.3	6.6	8.3
11	Revenge GLX	6.2	6.6	6.5	5.8	6.0	6.7
12	LCK	6.2	6.3	6.5	5.8	6.1	7.7
13	Regal 5	6.2	6.5	6.0	6.1	6.1	9.0
14	Amazing GS	6.2	6.5	5.9	6.2	6.1	7.7
15	Dasher 3	6.2	6.3	6.6	5.5	6.2	7.7
16	Protégé GLR	6.1	5.9	6.2	5.9	6.2	7.0
17	GL-2	6.1	6.2	6.0	6.1	5.9	7.0
18	GL3 Comp	6.1	6.1	6.0	6.2	5.9	7.0
19	Attribute	6.0	6.7	5.8	5.7	5.9	7.7
20	Panther GLS	6.0	6.6	5.5	6.2	5.6	6.0
21	Fusion	6.0	6.0	6.1	6.0	5.8	8.3
22	Palace	6.0	6.3	6.1	5.7	5.7	8.3
23	SR 4600	5.9	6.9	6.0	5.1	5.8	7.0
24	GL1 Comp	5.9	6.9	5.6	5.2	6.0	7.0
25	Soprano	5.9	6.7	6.1	5.2	5.6	7.7
26	Homerun	5.9	6.4	5.9	5.4	5.7	6.7
27	Paragon GLR	5.8	6.4	5.6	5.7	5.3	6.7
28	Keystone 2	5.7	6.0	5.5	5.9	5.5	6.0
29	Primary	5.7	5.8	5.9	5.4	5.7	7.3
30	APR 1648	5.7	4.6	5.8	6.3	6.2	8.3
31	MMW	5.7	6.4	5.4	5.5	5.6	7.0
32	Notable	5.7	6.6	5.5	5.6	5.0	5.7
33	Repell GLS	5.6	6.0	5.7	5.5	5.2	5.3
34	1G Squared	5.6	6.7	5.2	4.9	5.5	6.3
35	Harrier	5.6	6.1	5.6	5.1	5.4	6.7

(Continued)

Table 1 (continued).

	Cultivar or Selection	Turf Quality[1] 2005-2008 Avg.	2005 Avg.	2006 Avg.	2007 Avg.	2008 Avg.	Color[2] Sept. 2008
36	Line Drive GLS	5.6	6.0	5.6	5.5	5.1	5.7
37	D04-UP	5.6	5.8	5.7	5.3	5.4	6.3
38	Buena Vista	5.5	5.5	5.4	5.6	5.5	8.3
39	$ilver Dollar	5.4	5.5	5.2	5.8	5.3	5.3
40	Phenom	5.4	6.0	5.4	4.9	5.3	6.7
41	AC2	5.3	5.1	5.4	5.5	5.2	7.7
42	D04-1667	5.3	5.9	5.7	5.0	4.6	6.0
43	PST-2GSM	5.3	5.5	5.1	5.4	5.2	5.7
44	Secretariat II GLSR	5.3	6.0	5.2	5.0	4.8	5.7
45	Apple GL	5.3	5.8	4.8	5.0	5.5	7.7
46	Charismatic II GLSR	5.2	5.7	4.9	4.8	5.3	6.7
47	Overdrive	5.1	4.8	5.0	5.5	5.3	6.7
48	PST-2AG4	5.1	5.7	5.0	5.1	4.7	5.7
49	Cabo II	5.1	4.9	5.1	4.9	5.2	8.7
50	APR 1670	5.0	5.6	5.0	5.2	4.3	5.0
51	ASP6004	5.0	4.7	4.9	5.2	5.2	7.3
52	Calypso III	5.0	5.0	5.0	5.2	4.9	8.0
53	Prototype	5.0	4.9	4.9	5.0	5.1	6.7
54	Dart	4.9	5.6	4.8	4.8	4.5	5.3
55	Gray Fox	4.9	5.0	4.9	5.2	4.5	5.7
56	VB77	4.9	4.7	4.9	5.0	5.0	6.0
57	ASP6006	4.9	4.8	4.8	4.6	5.3	8.0
58	Pleasure Supreme	4.9	4.9	4.8	4.6	5.2	7.0
59	Gray Star	4.8	4.8	4.5	5.3	4.7	5.3
60	RAD-PR8	4.7	4.7	4.6	4.7	5.0	7.3
61	SNR	4.7	4.6	4.4	4.8	5.1	8.0
62	Manhattan 5 GLR	4.7	5.3	4.8	4.6	4.1	5.7
63	SRX 4692	4.7	4.6	4.7	5.0	4.5	6.3
64	PST-217	4.7	4.0	4.8	4.9	5.0	6.0
65	VB99	4.6	4.4	4.6	4.7	4.8	7.7
66	PST-2BLK	4.6	4.5	4.5	4.7	4.8	6.3
67	Cutter II	4.6	4.0	4.5	4.9	5.1	6.7
68	Pentium	4.6	4.5	4.7	4.7	4.5	5.7
69	Mach I	4.6	4.7	4.8	4.1	4.7	7.7
70	ES45	4.6	4.5	4.6	4.5	4.6	6.7

(Continued)

Table 1 (continued).

	Cultivar or Selection	Turf Quality[1] 2005-2008 Avg.	2005 Avg.	2006 Avg.	2007 Avg.	2008 Avg.	Color[2] Sept. 2008
71	Quicksilver	4.6	4.2	4.2	5.1	4.8	7.3
72	Citation Fore	4.5	4.9	4.3	4.6	4.5	4.7
73	DP 17-9499	4.5	4.1	4.5	4.7	4.8	6.3
74	GPR	4.5	4.4	4.5	4.6	4.7	7.0
75	04-BEN	4.5	4.5	4.5	4.7	4.3	5.7
76	Pinnacle II	4.5	4.6	4.5	4.4	4.6	6.7
77	Top Gun II	4.5	4.1	4.4	4.7	4.7	5.7
78	Delaware XL	4.5	4.3	4.4	4.6	4.7	7.0
79	PM 102	4.5	4.1	4.6	4.7	4.4	7.7
80	E-99	4.5	4.1	4.7	4.6	4.4	5.0
81	Firebolt	4.5	4.4	4.4	4.3	4.7	7.3
82	La Quinta	4.4	4.0	4.4	4.7	4.5	8.3
83	Plateau	4.4	4.6	4.1	4.7	4.3	5.0
84	SP4	4.4	4.0	4.1	4.7	4.8	8.0
85	TR47	4.4	4.0	4.2	4.7	4.6	6.7
86	Headstart 2	4.3	3.7	4.1	4.9	4.6	7.0
87	Presidio	4.3	4.1	4.3	4.1	4.5	7.0
88	D04-LP05	4.3	3.7	4.2	4.9	4.3	7.0
89	Pizzazz	4.3	3.9	4.3	4.5	4.3	6.7
90	Monterey 3	4.3	3.9	4.2	4.3	4.5	5.3
91	Wind Dance 2	4.2	3.5	4.3	4.6	4.6	7.7
92	Halo	4.2	4.0	4.2	4.4	4.3	7.0
93	BAR Lp 4920	4.1	4.0	4.4	3.9	4.2	6.3
94	Wayfarer	4.1	4.0	4.1	4.4	4.1	7.0
95	04-BRE	4.1	4.5	4.0	3.9	4.1	6.0
96	Accent II	4.1	4.1	4.3	4.0	4.1	4.7
97	BAR Lp 4420	4.1	4.1	4.2	4.3	4.0	7.0
98	SRX 4682	4.1	4.7	4.0	3.9	3.7	5.3
99	BAR Lp 4317	4.1	3.9	4.1	4.0	4.4	5.7
100	PS-2	4.1	3.3	4.5	4.2	4.2	6.3
101	Sunshine 2	4.1	3.7	3.9	4.2	4.4	7.0
102	Goalkeeper II	4.0	3.5	3.9	4.3	4.3	5.7
103	Pianist	4.0	3.9	3.9	4.2	4.0	5.0
104	Brightstar SLT	4.0	3.9	4.0	3.8	4.2	5.0
105	ASP6003	4.0	3.7	4.2	4.0	4.0	7.0

(Continued)

Table 1 (continued).

	Cultivar or Selection	Turf Quality[1] 2005-2008 Avg.	2005 Avg.	2006 Avg.	2007 Avg.	2008 Avg.	Color[2] Sept. 2008
106	Caddieshack II	4.0	3.2	3.9	4.4	4.3	6.0
107	Galatti	3.9	4.0	3.5	4.0	4.2	5.0
108	ASP6002	3.9	3.8	4.0	4.0	3.8	7.7
109	ASP6001	3.8	3.3	3.8	4.0	4.2	7.7
110	Pick 02-R	3.8	3.7	3.6	3.9	4.0	7.7
111	ASP6005	3.8	3.9	3.7	3.6	4.1	6.7
112	Inspire	3.8	3.4	3.9	4.1	3.8	4.7
113	Premier II	3.5	3.7	3.5	3.3	3.6	4.7
114	Barlennium	3.5	3.1	3.3	3.8	3.7	5.0
115	Palmer III	3.4	3.4	3.4	3.3	3.3	4.7
116	DP 17-9788	3.3	3.4	3.2	3.4	3.2	3.7
117	Panther	3.2	3.0	3.3	2.9	3.4	4.7
118	Affinity	3.0	3.2	3.0	2.6	3.0	2.3
119	LPR 02203	2.6	2.5	2.8	2.3	2.7	2.0
120	Premier	2.5	2.9	2.7	2.4	2.2	1.7
121	Pinnacle	2.3	2.1	2.4	2.4	2.2	1.3
122	Manhattan II	2.2	1.8	2.0	2.3	2.6	4.3
123	Linn	1.0	1.0	1.0	1.0	1.0	1.0
	LSD at 5% =	0.6	0.7	0.7	1.0	0.8	1.6

[1]9 = best turf quality
[2]9 = darkest green genetic color

Table 2. Performance of perennial ryegrass cultivars and selections in a turf trial established in September 2004 at North Brunswick, NJ. (Includes all entries of the 2004 National Turfgrass Evaluation Program (NTEP) Perennial Ryegrass Test.)

	Cultivar or Selection	Turf Quality[1] 2005-2008 Avg.	Turf Quality[1] 2005 Avg.	Turf Quality[1] 2006 Avg.	Turf Quality[1] 2007 Avg.	Turf Quality[1] 2008 Avg.	Red Thread[2] 2008 Avg.	Wear Recovery[3] Aug. 2008	Color[4] Oct. 2008	Density[5] Oct. 2008	Leaf Texture[6] Oct. 2008
1	All*Star 3	7.0	7.4	7.2	6.7	6.7	7.2	6.7	6.3	6.3	6.3
2	Amazing GS	6.8	6.8	7.0	6.9	6.5	7.3	6.3	6.0	6.3	6.0
3	Zoom	6.7	6.4	6.6	7.0	6.7	7.3	7.0	6.0	6.3	6.0
4	Uno	6.7	7.7	6.9	6.1	6.2	6.8	6.3	6.7	7.0	6.7
5	Regal 5	6.6	7.1	6.6	7.1	5.7	6.2	6.0	7.7	5.3	5.7
6	Homerun	6.6	6.6	6.5	6.5	6.8	8.0	6.7	5.7	7.3	7.7
7	Derby Xtreme	6.6	6.8	6.6	6.4	6.5	7.2	5.7	5.7	6.7	6.3
8	Attribute	6.5	6.9	6.6	6.6	6.1	7.0	5.0	5.3	6.0	6.0
9	Dasher 3	6.5	7.2	6.6	6.2	5.9	6.0	5.0	5.7	7.0	6.0
10	SR 4600	6.5	7.4	6.2	6.1	6.4	7.2	6.3	5.0	6.3	5.7
11	Palace	6.5	6.6	6.2	6.8	6.4	8.2	7.0	6.7	5.3	5.7
12	Fiesta 4	6.5	7.0	6.8	5.9	6.1	5.8	6.7	5.0	6.0	5.7
13	Exacta II GLSR	6.4	6.8	6.0	6.7	6.2	6.7	5.7	5.7	6.0	6.7
14	Keystone 2	6.4	6.2	6.2	6.5	6.6	7.3	8.0	5.0	6.0	6.7
15	Primary	6.4	6.7	6.4	6.0	6.4	7.2	7.3	5.3	6.7	6.3
16	Kokomo II	6.4	6.7	6.3	6.0	6.5	7.8	6.7	6.7	5.3	5.0
17	Palmer V	6.4	7.1	6.5	5.8	6.0	8.0	5.7	6.0	6.7	7.0
18	Revenge GLX	6.3	6.7	5.8	6.6	6.3	6.0	5.0	6.3	6.0	6.0
19	Grand Slam II	6.3	6.1	6.5	6.0	6.5	7.7	6.3	4.7	5.7	5.3
20	Apple GL	6.3	6.8	5.6	6.3	6.4	6.3	5.3	5.7	5.7	5.3
21	Panther GLS	6.2	6.7	6.7	5.6	5.8	6.8	4.0	4.7	6.3	6.3
22	Palmer GLS	6.2	6.6	6.0	6.1	6.1	7.2	5.7	5.3	6.3	6.0
23	1G Squared	6.1	6.7	5.8	6.1	5.8	5.7	6.7	4.3	5.3	6.3
24	Silver Dollar	6.1	6.1	6.8	6.0	5.6	6.8	3.7	5.7	6.3	6.3
25	Palmer IV	6.1	6.6	5.9	6.0	6.1	6.7	5.3	7.0	6.0	6.3

(Continued)

Table 2 (continued).

	Cultivar or Selection	Turf Quality[1] 2005-2008 Avg.	2005 Avg.	2006 Avg.	2007 Avg.	2008 Avg.	Red Thread[2] 2008 Avg.	Wear Recovery[3] Aug. 2008	Color[4] Oct. 2008	Density[5] Oct. 2008	Leaf Texture[6] Oct. 2008
26	Transformer	6.1	6.9	6.2	5.7	5.8	7.2	5.7	4.7	6.3	6.3
27	Notable	6.1	6.6	6.2	5.9	5.6	7.7	5.7	5.0	5.3	5.7
28	Harrier	6.1	7.1	5.9	5.5	5.9	7.0	5.3	5.0	6.3	5.7
29	Line Drive GLS	6.1	6.6	5.9	5.5	6.2	6.5	6.3	4.3	5.7	6.3
30	Paragon GLR	6.0	6.9	5.7	5.6	6.0	7.5	5.7	5.0	5.3	6.0
31	Soprano	6.0	7.2	5.8	5.7	5.4	5.5	4.3	5.7	6.0	6.0
32	Defender	6.0	6.7	5.8	5.7	6.0	8.0	5.3	5.3	5.7	5.3
33	MMW	6.0	7.1	6.3	5.3	5.5	5.3	5.0	5.7	6.3	6.0
34	Charismatic II GLSR	6.0	6.6	5.9	5.8	5.7	6.2	4.0	4.3	6.0	6.0
35	Dart	6.0	6.7	5.9	5.8	5.7	6.0	6.0	4.3	5.3	5.0
36	SRX 4692	6.0	6.4	6.2	5.9	5.4	7.2	5.7	4.0	4.3	5.0
37	Secretariat II GLSR	5.9	6.6	5.8	5.7	5.6	6.8	5.0	4.0	5.7	6.0
38	PST-2AG4	5.9	5.9	6.5	5.9	5.6	6.5	4.7	4.3	5.3	5.7
39	Prototype	5.9	5.8	6.0	5.8	5.8	8.7	5.7	5.0	5.3	6.3
40	APR 1670	5.9	6.5	5.7	5.8	5.6	6.2	6.0	4.7	5.0	5.0
41	Protégé GLR	5.8	6.4	6.1	5.9	4.9	5.7	3.0	5.7	5.7	6.0
42	Gray Fox	5.8	5.8	6.1	5.5	5.7	6.7	5.3	5.0	5.7	5.3
43	Fusion	5.8	6.0	5.8	5.7	5.6	6.8	5.7	6.3	5.0	6.0
44	Manhattan 5 GLR	5.7	6.3	5.0	5.5	5.9	7.2	6.7	4.7	4.7	5.0
45	ASP 6004	5.5	4.6	5.8	6.1	5.6	7.7	4.3	6.7	5.0	6.0
46	Stellar GL	5.5	6.5	5.6	4.9	5.2	6.7	5.0	6.0	6.0	5.0
47	Buena Vista	5.5	5.9	5.1	5.6	5.5	6.5	4.3	5.0	4.3	5.0
48	Phenom	5.5	6.6	5.3	5.1	4.9	5.7	5.0	4.7	5.0	5.3
49	Pleasure Supreme	5.5	5.1	5.4	5.7	5.6	8.2	6.0	6.0	6.0	6.0
50	E-99	5.4	4.9	5.5	5.4	6.2	8.0	5.3	5.0	7.3	7.0

(Continued)

Table 2 (continued).

	Cultivar or Selection	Turf Quality[1] 2005-2008 Avg.	2005 Avg.	2006 Avg.	2007 Avg.	2008 Avg.	Red Thread[2] 2008 Avg.	Wear Recovery[3] Aug. 2008	Color[4] Oct. 2008	Density[5] Oct. 2008	Leaf Texture[6] Oct. 2008
51	Cabo II	5.4	6.4	5.3	5.1	4.7	6.8	3.7	8.0	5.0	4.7
52	Calypso III	5.4	5.3	5.2	5.7	5.5	6.8	5.3	6.7	5.0	5.3
53	Repell GLS	5.4	6.0	5.1	5.4	5.1	5.8	3.7	4.3	5.3	5.7
54	Gray Star	5.3	4.9	5.4	5.6	5.5	7.5	5.7	5.0	5.3	4.7
55	Delaware XL	5.3	4.5	5.8	5.6	5.1	6.8	4.3	7.3	4.7	4.7
56	Overdrive	5.2	4.9	5.5	5.6	5.2	6.3	5.0	4.7	4.3	5.0
57	PST-2BLK	5.2	4.6	5.4	5.3	5.6	7.3	4.0	4.7	5.3	5.0
58	Plateau	5.2	5.0	5.1	5.4	5.5	6.2	4.7	3.0	5.3	4.7
59	Brea	5.2	5.3	5.0	5.5	4.9	5.5	4.7	5.0	4.3	5.0
60	ASP 6005	5.2	5.1	5.2	5.1	5.1	4.8	3.7	7.7	4.3	5.7
61	ASP 6006	5.2	4.7	5.1	5.8	5.1	6.3	4.3	7.7	4.7	5.0
62	RAD-PR8	5.2	5.4	4.9	4.7	5.7	7.0	5.0	4.3	6.3	6.0
63	SRX 4682	5.2	5.8	4.9	5.1	4.9	5.3	5.0	3.3	4.7	5.7
64	Fiji	5.1	4.5	5.4	5.6	4.9	6.8	3.3	6.3	4.7	4.7
65	Edge II	5.1	5.1	5.1	5.5	4.8	6.2	4.0	6.7	4.3	5.7
66	APR 1648	5.1	3.5	5.5	6.3	5.4	6.0	4.7	5.3	5.3	5.7
67	ASP 6003	5.1	3.9	4.9	5.8	5.8	7.0	4.3	6.7	5.3	5.3
68	ES45	5.1	5.0	5.4	5.0	5.1	5.8	5.0	6.7	5.3	4.3
69	ASP 6002	5.1	4.8	5.3	5.6	4.7	6.3	4.7	7.3	4.3	4.3
70	Wind Dance 2	5.1	4.8	4.9	5.4	5.1	7.3	4.7	7.0	5.0	5.0
71	Ringer II	5.0	5.3	4.5	5.3	5.0	7.2	4.7	3.7	4.7	6.0
72	Citation Fore	5.0	5.0	4.9	4.8	5.3	7.0	5.3	3.7	5.3	5.3
73	Pentium	5.0	4.0	5.5	5.2	5.1	6.7	5.0	3.7	5.7	5.7
74	VB77	4.9	4.7	4.9	5.0	5.0	5.8	3.7	6.0	4.0	5.0
75	PST-217	4.9	4.5	5.0	5.0	5.2	7.2	4.0	4.7	4.0	4.7

(Continued)

Table 2 (continued).

	Cultivar or Selection	Turf Quality[1] 2005-2008 Avg.	2005 Avg.	2006 Avg.	2007 Avg.	2008 Avg.	Red Thread[2] 2008 Avg.	Wear Recovery[3] Aug. 2008	Color[4] Oct. 2008	Density[5] Oct. 2008	Leaf Texture[6] Oct. 2008
76	Pinnacle II	4.8	4.4	5.1	5.0	4.8	7.0	4.3	5.7	4.7	4.7
77	Pizzazz	4.8	4.3	5.2	4.7	5.0	6.5	4.7	5.0	5.0	5.3
78	Presidio	4.8	4.4	5.0	5.1	4.5	5.8	3.3	5.3	4.7	5.3
79	Accent II	4.7	3.8	4.7	5.0	5.5	7.7	5.7	5.0	5.0	6.7
80	TR47	4.7	4.5	5.0	4.6	4.7	6.8	3.0	8.0	5.0	4.3
81	Nexus XD	4.7	4.0	4.8	5.1	4.9	7.0	3.7	8.0	4.3	5.0
82	Nexus XR	4.7	4.7	5.2	4.6	4.4	5.7	3.3	6.3	4.3	4.0
83	Galatti	4.7	4.1	4.9	5.3	4.6	7.5	4.7	4.3	5.7	5.7
84	ASP 6001	4.6	3.8	4.8	4.9	5.2	6.3	4.0	7.0	5.0	5.3
85	Wayfarer	4.6	4.3	4.8	4.9	4.5	5.8	3.0	8.3	3.3	5.3
86	Top Gun II	4.6	3.4	4.7	5.4	4.7	4.8	4.0	5.7	5.0	5.3
87	Mach I	4.6	3.8	4.7	5.0	4.9	5.7	4.7	6.3	5.0	5.7
88	Cutter II	4.6	3.7	4.7	5.1	4.9	6.0	5.3	7.7	5.0	5.3
89	Quicksilver	4.6	3.7	4.8	5.1	4.8	5.5	4.7	8.0	4.7	5.0
90	DP 17-9499	4.6	4.0	4.9	4.7	4.7	7.7	3.3	5.3	5.3	5.7
91	Inspire	4.5	3.3	4.6	4.8	5.4	7.0	6.3	4.3	5.3	5.7
92	Halo	4.4	4.0	4.7	4.9	4.0	4.8	3.0	7.7	4.0	4.7
93	VB99	4.4	4.4	4.6	4.4	4.1	5.2	3.0	8.0	4.7	4.7
94	Firebolt	4.4	3.8	3.7	5.0	4.9	6.0	3.3	7.3	4.7	5.3
95	D04-LP05	4.4	3.4	4.2	5.0	4.9	6.7	4.0	5.3	5.0	5.0
96	Brightstar SLT	4.3	3.6	4.2	4.4	5.1	7.2	4.3	5.0	4.7	5.3
97	BAR Lp 4420	4.3	4.1	3.9	4.7	4.6	6.5	4.3	6.0	4.7	5.3
98	PS-2	4.3	3.2	4.5	4.6	4.7	6.8	5.0	6.0	5.3	5.7
99	PM 102	4.2	3.6	4.2	4.5	4.5	6.3	4.7	8.0	4.7	5.0
100	Pianist	4.2	3.3	4.3	4.6	4.3	6.2	3.3	5.0	5.7	6.0

(Continued)

Table 2 (continued).

	Cultivar or Selection	Turf Quality[1] 2005-2008 Avg.	2005 Avg.	2006 Avg.	2007 Avg.	2008 Avg.	Red Thread[2] 2008 Avg.	Wear Recovery[3] Aug. 2008	Color[4] Oct. 2008	Density[5] Oct. 2008	Leaf Texture[6] Oct. 2008
101	BAR Lp 4317	4.1	3.8	3.9	4.4	4.2	6.2	5.0	4.3	3.7	4.3
102	Headstart 2	4.1	3.2	4.1	4.7	4.4	5.3	4.0	7.0	5.0	5.7
103	La Quinta	4.1	3.6	4.1	4.3	4.4	4.8	3.7	8.0	4.3	5.0
104	Palmer III	4.1	3.4	3.9	4.4	4.5	5.7	4.3	3.7	4.7	5.3
105	Barlennium	4.1	3.4	4.0	4.3	4.6	6.7	4.7	3.7	5.3	5.3
106	BAR Lp 4920	4.0	3.5	4.0	4.2	4.4	6.8	5.3	3.0	3.7	4.7
107	DP 17-9788	4.0	3.8	4.1	4.0	4.0	6.8	3.7	2.3	4.3	4.7
108	Monterey 3	4.0	3.3	4.6	4.2	3.8	4.5	2.3	3.7	4.0	4.0
109	Goalkeeper II	3.9	3.1	3.6	4.2	4.7	6.7	3.7	4.7	4.3	5.3
110	Caddieshack II	3.9	2.9	4.0	4.5	4.1	5.5	4.3	5.0	5.0	4.7
111	Pick 02-R	3.9	3.2	3.4	4.6	4.2	7.0	4.0	8.3	6.0	6.7
112	Premier	3.8	3.4	3.8	3.5	4.4	7.3	5.3	2.7	5.0	4.3
113	Sunshine 2	3.7	3.2	3.3	4.1	4.1	5.0	3.7	8.0	4.7	5.0
114	Premier II	3.7	3.0	3.6	3.9	4.3	5.8	5.3	3.3	5.0	4.7
115	Affinity	3.7	3.5	3.7	3.3	4.2	6.5	5.3	2.0	3.7	3.7
116	Panther	3.6	2.4	3.6	3.8	4.6	7.8	5.3	3.0	4.7	5.3
117	Pinnacle	3.1	2.6	3.1	2.9	3.7	8.0	4.0	2.3	4.7	4.3
118	LPR 02203	2.9	2.0	2.7	2.9	3.9	7.5	3.3	4.0	3.7	4.0
119	Manhattan II	2.7	2.1	2.5	2.9	3.5	7.2	3.3	2.7	4.0	4.3
120	Linn	1.1	1.1	1.0	1.1	1.1	8.3	1.3	1.0	1.0	1.0

(Continued)

Table 2 (continued).

Cultivar or Selection	Turf Quality[1] 2005-2008 Avg.	2005 Avg.	2006 Avg.	2007 Avg.	2008 Avg.	Red Thread[2] 2008 Avg.	Wear Recovery[3] Aug. 2008	Color[4] Oct. 2008	Density[5] Oct. 2008	Leaf Texture[6] Oct. 2008
LSD at 5% =	0.7	0.7	0.9	1.1	1.1	2.5	2.2	1.4	1.6	1.4

[1]9 = best turf quality
[1]9 = least disease
[3]9 = best recovery from wear
[4]9 = darkest green genetic color
[5]9 = highest shoot density
[6]9 = finest leaf texture

Table 3. Performance of perennial ryegrass cultivars and selections in a turf trial established in August 2005 at Adelphia, NJ.

	Cultivar or Selection	Turf Quality[1] 2006-2008 Avg.	Turf Quality[1] 2006 Avg.	Turf Quality[1] 2007 Avg.	Turf Quality[1] 2008 Avg.	Wear[2] July 2008
1	APR 1925	6.7	6.1	6.7	7.3	4.3
2	IS-PR 314	6.5	6.7	6.5	6.2	4.0
3	IS-PR 315	6.5	6.3	6.6	6.5	5.0
4	PSG Q-05	6.5	6.4	6.4	6.6	4.7
5	APR 1852	6.4	6.0	6.6	6.7	3.3
6	APR 1866	6.4	6.2	6.8	6.2	3.0
7	PSG G-05	6.3	6.2	6.2	6.4	5.0
8	2L4 Comp	6.1	6.2	6.3	5.8	6.3
9	APR 1926	6.1	5.9	6.2	6.1	5.3
10	2B4 Comp	6.0	5.8	6.1	6.0	4.7
11	Zoom	6.0	6.2	6.2	5.5	4.0
12	APR 1803	5.9	6.3	6.0	5.6	4.3
13	2B1 Comp	5.9	5.6	6.1	6.0	5.0
14	PSG 78-SP-Bulk 05	5.9	5.7	6.0	5.9	5.3
15	Soprano	5.9	6.2	5.9	5.4	3.3
16	PSG E-05	5.9	6.1	5.9	5.6	5.0
17	APR 1854	5.8	6.1	6.0	5.4	3.3
18	APR 1856	5.8	6.2	5.9	5.4	4.7
19	2B3 Comp	5.8	5.9	5.8	5.8	4.7
20	2B5 Comp	5.8	6.2	5.9	5.3	4.3
21	MRF PR-025	5.8	5.7	5.8	5.8	3.7
22	APR 1853	5.7	5.7	5.9	5.7	4.7
23	APR 1916	5.7	5.9	6.0	5.3	3.7
24	PSG F-05	5.7	5.7	5.8	5.7	5.0
25	2B2 Comp	5.7	5.7	5.8	5.4	4.3
26	APR 1912	5.6	5.7	5.5	5.6	3.3
27	PSG U-05	5.6	5.7	5.5	5.5	3.3
28	SR 4600	5.6	5.9	5.2	5.6	4.0
29	2L1 Comp	5.5	5.8	5.5	5.4	5.3
30	PSG BB-05	5.5	6.2	5.1	5.3	4.0
31	APR 1857	5.5	5.6	5.7	5.3	5.0
32	APR 1906	5.5	5.8	5.6	5.1	4.7
33	PST-2MGG-05	5.5	5.0	5.8	5.6	4.7
34	Homerun	5.5	5.8	5.5	5.1	4.3
35	APR 1882	5.4	5.9	5.4	5.0	3.3

(Continued)

Table 3 (continued).

	Cultivar or Selection	Turf Quality[1] 2006-2008 Avg.	2006 Avg.	2007 Avg.	2008 Avg.	Wear[2] July 2008
36	APR 1884	5.4	5.6	5.7	5.0	5.3
37	PST-Syn-2AGP	5.4	5.8	5.3	5.1	4.3
38	2L3 Comp	5.4	5.4	5.5	5.3	5.0
39	Phenom	5.4	5.7	5.5	4.9	3.0
40	Palmer GLS	5.4	5.9	5.5	4.7	3.7
41	Paragon GLR	5.3	5.4	5.4	5.2	5.3
42	APR 1887	5.3	6.0	5.0	4.9	4.0
43	PST-Syn-2A03	5.3	5.4	5.7	4.8	4.3
44	APR 1889	5.3	5.3	5.2	5.2	2.7
45	PSG Z-05	5.2	5.6	5.3	4.9	5.0
46	APR 1855	5.2	5.5	5.6	4.6	4.0
47	Apple GL	5.2	5.3	5.1	5.2	4.0
48	APR 1885	5.2	5.7	5.1	4.8	4.0
49	Harrier	5.2	5.5	5.3	4.7	5.0
50	Applaud II	5.2	5.3	5.6	4.7	5.0
51	APR 1851	5.2	5.4	5.1	4.9	3.0
52	PSG 81-Bulk 05	5.1	5.8	5.0	4.6	4.0
53	2L2 Comp	5.1	5.7	5.0	4.8	3.3
54	APR 1893	5.1	5.3	5.5	4.5	2.7
55	Manhattan 5 GLR	5.1	5.1	5.4	4.9	4.3
56	SR 4550	5.1	4.8	5.0	5.4	5.0
57	APR 1895	5.1	5.3	5.2	4.7	5.0
58	PSG 80-SP-Bulk 05	5.0	4.6	5.1	5.4	4.0
59	APR 1873	5.0	4.9	5.4	4.7	3.7
60	APR 1874	5.0	5.3	5.1	4.6	4.3
61	APR 1880	5.0	5.6	5.0	4.4	2.0
62	APR 1888	5.0	5.3	5.0	4.5	4.0
63	05-J PR	5.0	4.9	5.1	4.9	4.7
64	PSG M-05	5.0	4.7	5.2	5.0	4.0
65	APR 1883	4.9	5.2	4.9	4.6	4.3
66	LS 2300	4.9	5.1	5.2	4.6	4.7
67	PST-Syn-2COL	4.9	4.6	5.0	5.2	3.3
68	APR 1877	4.9	4.7	5.3	4.8	3.7
69	MRF PR-007	4.9	4.3	4.9	5.5	3.7
70	PST-2GSB	4.9	5.0	4.8	4.9	4.7

(Continued)

Table 3 (continued).

	Cultivar or Selection	Turf Quality[1] 2006-2008 Avg.	2006 Avg.	2007 Avg.	2008 Avg.	Wear[2] July 2008
71	IG2	4.9	4.7	5.0	4.9	4.3
72	05-F PR	4.9	4.6	4.6	5.5	5.0
73	PST-2AGH	4.9	4.7	4.9	5.0	3.3
74	APR 1878	4.8	5.0	5.1	4.5	4.3
75	1G Squared	4.8	5.1	5.0	4.4	4.3
76	SRX 4692	4.8	5.2	4.7	4.6	4.3
77	APR 1879	4.8	5.3	4.8	4.3	4.0
78	Silver Dollar	4.8	4.8	4.8	4.8	3.0
79	APR 1907	4.8	5.2	4.6	4.6	4.7
80	Grand Slam II	4.8	4.7	4.8	4.9	4.3
81	MRF PR-004	4.8	4.4	4.8	5.1	4.0
82	APR 1902	4.8	5.1	4.9	4.3	4.0
83	Gray Fox	4.8	4.9	4.5	4.9	3.7
84	PST-2AG$	4.8	4.7	4.8	4.8	3.3
85	PST-21N4	4.8	4.2	4.8	5.2	3.7
86	Top Hat 2	4.7	4.1	4.7	5.4	4.3
87	MRF PR-010	4.7	4.2	4.7	5.3	3.7
88	APR 1923	4.7	4.6	4.6	5.0	4.0
89	PST-Syn-2MGS	4.7	5.0	4.7	4.5	4.0
90	MRF PR-012	4.7	4.2	4.9	5.0	3.7
91	PST-2F15	4.7	4.4	4.6	5.1	4.0
92	PST-2LGS	4.7	4.7	4.6	4.8	4.0
93	Dart	4.7	5.0	4.7	4.3	4.0
94	05-E PR	4.7	4.1	4.7	5.3	4.0
95	PST-2TQL	4.7	4.4	4.7	4.9	4.3
96	IS-PR 316	4.7	4.8	4.8	4.3	4.0
97	PSG 92-Bulk 05	4.7	5.1	4.3	4.6	3.7
98	Integra II	4.6	4.8	4.6	4.6	3.7
99	PSG 84-SP-Bulk 05	4.6	3.7	4.6	5.7	4.3
100	PSG V-05	4.6	4.3	4.7	4.9	3.0
101	MRF PR-013	4.6	4.0	4.7	5.1	4.3
102	PSG A-05	4.6	4.4	4.6	4.8	4.3
103	Gray Star	4.6	4.6	4.7	4.4	4.7
104	APR 1875	4.6	4.9	4.4	4.4	3.0
105	SR 4220	4.6	4.3	4.5	4.9	4.3

(Continued)

Table 3 (continued).

	Cultivar or Selection	Turf Quality[1] 2006-2008 Avg.	Turf Quality[1] 2006 Avg.	Turf Quality[1] 2007 Avg.	Turf Quality[1] 2008 Avg.	Wear[2] July 2008
106	MRF PR-015	4.6	4.0	4.6	5.1	3.7
107	Wind Dance 2	4.5	4.3	4.3	5.0	4.0
108	APR 1872	4.5	4.9	4.6	4.1	4.0
109	Amazing	4.5	4.4	4.7	4.5	4.0
110	MRF PR-016	4.5	4.1	4.7	4.7	4.0
111	APR 1911	4.5	4.5	4.6	4.4	4.3
112	Plateau	4.5	4.3	4.5	4.7	5.0
113	Citation Fore	4.5	4.5	4.7	4.3	4.3
114	PST-Syn-2RCC	4.5	4.6	4.2	4.6	3.7
115	PST-Syn-2SOV	4.5	4.2	4.5	4.7	4.0
116	Gator 3	4.5	4.0	4.3	5.1	4.0
117	PST-Syn-2GC	4.5	4.6	4.3	4.5	4.0
118	MRF PR-003	4.4	4.0	4.5	4.8	3.3
119	PSG 85-SP-Bulk 05	4.4	4.1	4.2	5.0	4.0
120	MRF PR-017	4.4	4.0	4.4	4.9	3.3
121	APR 1924	4.4	3.3	5.1	4.9	3.3
122	Peregrine	4.4	4.1	4.3	4.9	4.0
123	MRF PR-024	4.4	4.0	4.6	4.7	3.3
124	MHT MSP 3729	4.4	4.3	4.7	4.3	4.3
125	PSG L-05	4.4	4.4	4.5	4.4	3.3
126	PSG H-05	4.4	3.8	4.6	4.8	4.0
127	PSG J-05	4.4	4.2	4.3	4.7	4.0
128	MRF PR-008	4.4	4.1	4.2	4.8	4.7
129	MRF PR-019	4.4	4.2	4.4	4.5	3.3
130	PST-2PC	4.4	4.3	4.3	4.5	4.3
131	MRF PR-020	4.4	3.9	4.4	4.8	3.3
132	MRF PR-002	4.3	4.1	4.2	4.7	4.3
133	APR 1876	4.3	4.5	4.2	4.3	4.0
134	SR 4420	4.3	4.2	4.3	4.5	4.7
135	Chaparral II	4.3	4.2	4.2	4.5	3.3
136	Quicksilver	4.3	3.9	4.2	4.8	3.7
137	APR 1918	4.3	4.4	4.5	4.0	4.3
138	IS-PR 313	4.3	4.0	4.2	4.7	3.0
139	PSG X-05	4.3	4.8	4.2	3.9	3.3
140	APR 1900	4.3	5.0	4.0	3.9	3.0

(Continued)

Table 3 (continued).

	Cultivar or Selection	Turf Quality[1] 2006-2008 Avg.	Turf Quality[1] 2006 Avg.	Turf Quality[1] 2007 Avg.	Turf Quality[1] 2008 Avg.	Wear[2] July 2008
141	APR 1899	4.3	4.8	4.1	3.9	4.0
142	APR 1671	4.2	4.0	4.5	4.1	4.7
143	PSG I-05	4.2	4.0	4.2	4.5	3.0
144	APR 1890	4.2	4.8	4.0	3.9	3.7
145	PSG 83-SP-Bulk 05	4.2	3.9	4.1	4.7	3.3
146	PST-Syn-2CAX	4.2	4.0	4.0	4.7	2.7
147	Manhattan 4	4.2	3.9	4.2	4.6	4.0
148	MRF PR-027	4.2	3.8	4.2	4.6	4.0
149	MRF PR-018	4.2	3.6	4.1	4.8	4.0
150	LS 2100	4.2	3.6	4.3	4.6	4.0
151	PST-2RHO	4.2	4.1	4.3	4.0	4.0
152	MRF PR-011	4.1	3.7	4.1	4.6	3.7
153	Headstart 2	4.1	3.7	4.0	4.7	4.3
154	MRF PR-005	4.1	4.0	3.9	4.4	2.7
155	MRF PR-014	4.1	3.6	4.1	4.6	3.7
156	MRF PR-023	4.1	4.0	4.0	4.4	3.7
157	Delaware XL	4.1	3.9	3.9	4.6	3.0
158	PST-Syn-2BMR	4.1	4.3	3.9	4.1	2.7
159	PST-2-Blue	4.1	3.8	4.0	4.5	3.0
160	MRF PR-021	4.1	3.9	4.1	4.3	3.3
161	PSG D-05	4.1	3.7	4.2	4.3	3.3
162	PSG K-05	4.1	3.5	4.1	4.7	4.7
163	PSG O-05	4.1	3.9	3.9	4.4	3.3
164	MRF PR-009	4.0	3.6	4.1	4.5	3.3
165	Mach 1	4.0	3.5	4.0	4.6	3.7
166	PSG 86-SP-Bulk 05	4.0	3.8	3.9	4.5	3.3
167	MRF PR-006	4.0	3.7	3.9	4.5	2.7
168	PST-2101	4.0	3.9	4.1	4.1	2.3
169	SRX 4682	4.0	4.2	4.0	3.8	4.7
170	PSG 45-SP-Bulk 05	4.0	4.6	3.6	3.8	2.0
171	LS 2200	4.0	3.7	4.1	4.2	3.3
172	Grand Slam	4.0	4.2	3.8	4.0	4.0
173	RAD-PR17	4.0	3.8	3.5	4.6	3.7
174	PSG N-05	4.0	3.5	3.8	4.6	4.0
175	PST-Syn-2TQM	4.0	3.8	3.9	4.1	4.0

(Continued)

Table 3 (continued).

	Cultivar or Selection	Turf Quality[1] 2006-2008 Avg.	Turf Quality[1] 2006 Avg.	Turf Quality[1] 2007 Avg.	Turf Quality[1] 2008 Avg.	Wear[2] July 2008
176	APR 1922	3.9	4.1	4.0	3.6	4.0
177	PSG 86-Bulk 05	3.9	3.8	3.6	4.3	4.0
178	PSG P-05	3.9	3.7	3.7	4.2	3.3
179	Brightstar SLT	3.9	3.5	3.8	4.3	3.7
180	Hawkeye	3.9	3.6	3.6	4.4	3.7
181	PSG Y-05	3.9	4.2	3.9	3.5	3.7
182	PSG 45-Bulk 05	3.9	4.1	3.7	3.8	1.7
183	PST-Syn-2SNS	3.9	3.6	4.0	4.0	4.0
184	Affirmed	3.8	3.6	3.9	4.0	3.7
185	PSG 90-Bulk 05	3.8	3.8	4.0	3.7	2.3
186	PST-2Q4	3.8	4.2	4.0	3.3	2.0
187	MRF PR-022	3.8	3.7	3.8	3.9	3.0
188	PSG 73-Bulk 05	3.8	3.3	3.9	4.2	3.7
189	05 I PR	3.8	3.1	3.7	4.5	3.7
190	MRF PR-001	3.8	3.5	3.7	4.2	3.3
191	Shining Star II	3.8	4.0	3.6	3.6	2.3
192	Confetti	3.7	3.4	4.0	3.8	4.3
193	PSG B-05	3.7	3.4	3.6	4.2	3.3
194	PST-Syn-2RZ	3.7	3.7	3.8	3.7	4.0
195	Show Time	3.7	3.3	3.9	4.0	3.7
196	SR 4500	3.7	3.3	3.6	4.3	4.7
197	Charger II	3.7	3.7	3.6	3.7	3.3
198	PST-2C4	3.6	4.0	3.5	3.3	2.3
199	MRF PR-026	3.6	2.9	4.0	3.9	4.0
200	PSG C-05	3.5	3.2	3.3	4.1	3.3
201	Exacta	3.5	3.0	3.7	3.8	3.7
202	Charismatic	3.5	3.2	3.6	3.7	3.0
203	PSG 93 Bulk 05	3.5	3.2	3.3	3.8	3.3
204	PST-2RT	3.4	3.6	3.3	3.4	3.0
205	PSG 82-Bulk 05	3.4	3.4	3.0	3.9	3.3
206	PSG AA-05	3.4	3.2	3.1	3.9	3.7
207	SR 4350	3.4	3.3	3.4	3.4	4.0
208	PST-2M4	3.3	3.2	3.3	3.5	3.0
209	PSG T-05	3.3	3.0	3.1	3.9	3.0
210	Churchill	3.3	3.1	3.3	3.4	3.0

(Continued)

Table 3 (continued).

	Cultivar or Selection	Turf Quality[1] 2006-2008 Avg.	Turf Quality[1] 2006 Avg.	Turf Quality[1] 2007 Avg.	Turf Quality[1] 2008 Avg.	Wear[2] July 2008
211	PST-2RIV	3.2	2.9	3.3	3.4	3.0
212	PSG W-05	3.2	3.2	3.1	3.3	3.0
213	Monterey II	3.1	2.7	3.2	3.3	3.7
214	PSG 77-Bulk 05	3.1	2.4	3.0	3.8	3.0
215	PSG R-05	2.6	2.9	2.4	2.7	3.7
216	Spreader III	2.6	2.5	3.1	2.2	3.0
217	PSG S-05	2.5	3.0	2.4	2.2	3.0
218	MSP 3639	2.5	2.9	2.5	2.1	2.7
	LSD at 5% =	0.6	0.6	0.7	0.9	1.5

[1]9 = best turf quality
[2]9 = highest quality wear; wear was applied in a total of 16 passes using a wear simulator

Table 4. Performance of perennial ryegrass cultivars and selections in a turf trial established in August 2006 at Adelphia, NJ.

	Cultivar or Selection	Turf Quality[1] 2007-2008 Avg.	Turf Quality[1] 2007 Avg.	Turf Quality[1] 2008 Avg.
1	Derby Xtreme	6.2	6.1	6.2
2	HP3 comp	6.2	6.1	6.2
3	HU1 comp	6.1	5.9	6.2
4	IS-PR 315	6.0	6.2	5.8
5	AMS comp	6.0	5.8	6.2
6	DP1	6.0	6.3	5.6
7	Soprano	6.0	6.2	5.7
8	HP1 comp	6.0	6.0	6.0
9	PAR comp	5.9	6.0	5.9
10	Palmer V	5.9	6.3	5.5
11	IS-PR 342	5.9	6.1	5.6
12	APR 1980	5.8	6.3	5.4
13	Apple GL	5.8	5.8	5.8
14	APR 2037	5.8	5.8	5.8
15	Paragon GLR	5.8	5.8	5.8
16	Harrier	5.8	6.0	5.6
17	RAD-PR39	5.8	5.6	5.9
18	APR 2036	5.7	5.9	5.5
19	APR 1979	5.7	6.1	5.3
20	Zoom	5.6	5.8	5.4
21	IS-PR 340	5.6	5.9	5.3
22	All*Star 3	5.6	5.8	5.5
23	Stellar GL	5.5	5.5	5.6
24	HP2 comp	5.5	5.7	5.3
25	Repell GLS	5.5	5.6	5.4
26	IS-PR 316	5.5	5.6	5.4
27	Homerun	5.5	6.3	4.7
28	APR 2031	5.5	5.5	5.4
29	APR 2034	5.5	5.3	5.6
30	RAD-PR44	5.5	5.4	5.5
31	MSH comp	5.5	5.3	5.6
32	Phenom	5.5	5.7	5.2
33	APR 2025	5.4	5.4	5.5
34	Palmer IV	5.4	5.2	5.6
35	IG Squared	5.4	5.4	5.5

(Continued)

Table 4 (continued).

	Cultivar or Selection	Turf Quality[1] 2007-2008 Avg.	2007 Avg.	2008 Avg.
36	SR 4600	5.4	5.9	4.8
37	Applaud II	5.3	5.4	5.2
38	IG2	5.3	5.4	5.1
39	APR 2035	5.3	5.3	5.2
40	PST-syn-2GLG	5.3	5.1	5.4
41	Silver Dollar	5.3	5.0	5.5
42	Gray Fox	5.3	5.3	5.2
43	Panther GLS	5.2	5.4	5.1
44	APR 2033	5.2	5.0	5.4
45	PST-2J15	5.2	5.0	5.3
46	Prelude GLS	5.2	5.2	5.2
47	APR 2026	5.2	5.0	5.3
48	AUR comp	5.1	5.2	5.1
49	Phenom	5.1	5.3	4.9
50	Manhattan 5 GLR	5.1	5.2	5.0
51	PST-2AG4	5.1	5.3	4.9
52	APR 2032	5.1	5.0	5.1
53	Integra II	5.0	4.7	5.4
54	All*Star 2	5.0	4.7	5.3
55	PST-syn-2CNV	5.0	4.9	5.1
56	PST-2GSB	5.0	4.9	5.1
57	APR 2038	5.0	4.9	5.1
58	RAD-PR36	4.9	4.9	4.9
59	PST-265M	4.9	4.7	5.1
60	Hawkeye 2	4.9	4.6	5.2
61	PST-2USA Bulk	4.9	4.8	5.0
62	Applaud	4.9	5.4	4.3
63	PST-2AG$	4.9	4.7	5.0
64	Plateau	4.9	4.7	5.1
65	Calypso III	4.9	4.6	5.1
66	APR 2024	4.9	5.1	4.6
67	RAD-PR28	4.9	4.8	4.9
68	PST-syn-2H20	4.8	4.6	5.1
69	Line Drive	4.8	4.6	5.0
70	Wizard II	4.8	4.6	5.0

(Continued)

Table 4 (continued).

	Cultivar or Selection	Turf Quality[1] 2007-2008 Avg.	2007 Avg.	2008 Avg.
71	IS-PR 341	4.8	4.7	4.9
72	Gray Star	4.8	4.9	4.7
73	PST-2SDG Bulk	4.8	4.7	4.8
74	SR 4550	4.8	4.5	5.0
75	RAD-PR38	4.7	4.6	4.8
76	RAD-PR33	4.7	4.2	5.2
77	Dart	4.7	4.6	4.7
78	Priority	4.7	4.5	4.8
79	PST-2RZB Bulk	4.6	4.6	4.6
80	Quicksilver	4.6	4.3	4.9
81	Jet	4.6	4.3	4.9
82	Delaware XL	4.6	4.6	4.6
83	PST-syn-2R04	4.6	4.3	4.9
84	RAD-PR34	4.6	4.6	4.6
85	Pennant III	4.6	4.3	4.8
86	SR 4220	4.5	4.5	4.5
87	Peregrine	4.5	4.4	4.7
88	Integra	4.5	4.3	4.8
89	Gator 3	4.5	4.3	4.7
90	04-BRE	4.5	4.5	4.5
91	SR 4420	4.4	4.3	4.5
92	Mach 1	4.4	4.3	4.4
93	IS-MBH2	4.3	4.1	4.5
94	Prelude IV	4.3	4.0	4.5
95	IS-PR 313	4.3	4.0	4.6
96	RAD-PR29	4.2	4.0	4.5
97	SR 4682	4.2	4.0	4.4
98	04-BEN	4.2	3.9	4.4
99	Manhattan 4	4.1	3.8	4.4
100	Headstart 2	4.1	3.5	4.6
101	Ringer	4.0	3.9	4.2
102	IS-PR 225	4.0	4.0	4.0
103	Citation Fore	3.9	3.8	4.0
104	Slugger	3.9	3.8	4.0
105	PST-2101	3.9	3.6	4.1

(Continued)

Table 4 (continued).

	Cultivar or Selection	Turf Quality[1] 2007-2008 Avg.	Turf Quality[1] 2007 Avg.	Turf Quality[1] 2008 Avg.
106	RAD-PR35	3.8	3.7	3.9
107	Hawkeye	3.8	3.6	3.9
108	Pinstripe	3.7	2.9	4.5
109	Confetti	3.7	3.5	3.8
110	Shining Star II	3.7	3.6	3.7
111	SR 4500	3.6	3.3	4.0
112	04-HEAT	3.6	3.3	3.9
113	Frontier	3.6	3.4	3.8
114	SR 4350	3.6	3.5	3.6
115	Sonata	3.6	3.1	4.0
116	STR 4TPCS	3.6	3.2	3.9
117	SRX 4SLT	3.5	3.1	4.0
118	PST-2SNS	3.5	3.3	3.7
119	Calypso II	3.4	3.0	3.8
120	Darkstar II	3.4	3.4	3.3
121	STR 4AAPR	3.3	2.9	3.6
122	STR 45AB4	3.2	3.1	3.3
123	T3	3.2	2.7	3.7
124	STR X863	2.8	2.6	2.9
	LSD at 5% =	0.6	0.7	0.7

[1]9 = best turf quality

Table 5. Performance of perennial ryegrass cultivars and selections in a turf trial established in August 2007 at Adelphia, NJ.

	Cultivar or Selection	Turf Quality[1] 2008 Avg.	Crown Rust[2] Oct. 2007	Gray Leaf Spot[2] Oct. 2007
1	OC2 Comp	6.2	7.7	8.0
2	GL-74	5.9	7.3	7.3
3	IS-PR 342	5.8	7.3	7.0
4	Fiesta 4	5.8	7.0	6.7
5	APR2072	5.7	5.3	6.7
6	Uno	5.7	6.3	6.3
7	GL-31	5.6	7.0	7.3
8	Transformer	5.6	5.7	6.3
9	Defender	5.6	6.3	6.7
10	IS-PR 341	5.5	6.7	6.7
11	APR 2037	5.5	7.0	6.0
12	RKS Comp	5.5	7.3	8.3
13	All*Star 3	5.4	6.7	6.7
14	Zoom	5.4	7.3	6.3
15	DF Comp	5.4	6.3	7.3
16	Buena Vista GLSR	5.4	6.7	6.3
17	Dasher III	5.4	7.3	7.7
18	Palmer IV	5.4	7.0	7.0
19	Palmer V	5.4	6.7	7.0
20	SAK Comp	5.3	7.0	7.0
21	Soprano	5.3	6.7	6.7
22	HP1	5.3	5.7	7.0
23	APR2083	5.3	5.3	6.0
24	GM3 Comp	5.3	6.7	6.3
25	ST1 Comp	5.3	7.3	8.0
26	GM4 Comp	5.3	6.7	6.3
27	Applaud II	5.3	5.3	5.3
28	APR2084	5.1	6.0	5.0
29	Monterey 3	5.1	5.3	6.0
30	IS-PR 409	5.1	7.3	6.3
31	PST-2USD	5.1	6.3	6.0
32	SR 4550	5.1	5.0	5.0
33	74-07	5.1	5.7	6.3
34	Amazing GS	5.1	6.0	6.0
35	HU1	5.1	7.0	6.3

(Continued)

Table 5 (continued).

	Cultivar or Selection	Turf Quality[1] 2008 Avg.	Crown Rust[2] Oct. 2007	Gray Leaf Spot[2] Oct. 2007
36	APR2074	5.1	6.3	6.7
37	Manhattan 5 GLR	5.1	6.0	7.3
38	GL3 Bulk	5.1	5.7	6.0
39	APR2090	5.0	5.7	6.0
40	RAD-PR55	5.0	6.3	5.0
41	APR2070	5.0	4.7	5.0
42	APR2085	5.0	5.3	5.3
43	Calypso III	5.0	5.7	5.3
44	Gray Fox	5.0	5.0	6.0
45	HP1	5.0	6.7	6.3
46	IS-PR 340	5.0	6.7	6.0
47	PST-2NKM	5.0	4.7	5.3
48	PST-SYN-2NKE7	5.0	5.0	6.0
49	06 J Lp	5.0	6.3	5.0
50	IG Squared	5.0	6.7	6.7
51	Panther GLS	5.0	6.3	6.7
52	SR 4600	4.9	7.0	7.3
53	Homerun	4.9	5.7	5.3
54	Gray Goose	4.9	4.7	6.0
55	APR2067	4.9	6.0	5.7
56	APR2097	4.9	7.0	5.3
57	Silver Dollar	4.9	5.7	5.7
58	APR2071	4.9	4.0	5.0
59	APR2079	4.9	5.7	6.3
60	HU1	4.9	6.7	6.3
61	Peregrine	4.9	3.7	5.0
62	Apple GL	4.9	5.7	6.0
63	GM2 Comp	4.8	7.0	7.0
64	PST-SYN-2MAG7	4.8	7.0	7.7
65	RAD-PR53	4.8	5.7	5.7
66	Pleasure Supreme	4.8	4.7	5.0
67	Priority	4.8	6.7	3.7
68	RAD-PR46	4.8	4.3	5.7
69	RAD-PR51	4.8	5.0	4.7
70	Top Gun II	4.8	4.3	4.3

(Continued)

Table 5 (continued).

	Cultivar or Selection	Turf Quality[1] 2008 Avg.	Crown Rust[2] Oct. 2007	Gray Leaf Spot[2] Oct. 2007
71	APR2096	4.8	6.7	5.0
72	Derby Xtreme	4.8	7.0	6.7
73	PST-2MAGS	4.8	7.0	6.7
74	RAD-PR49	4.8	4.3	5.0
75	Stellar GL	4.8	5.7	6.0
76	Pennant III	4.8	4.7	3.7
77	APR2081	4.7	4.7	5.7
78	Hawkeye 2	4.7	4.3	4.3
79	PST-2NKMS	4.7	5.7	6.3
80	PST 2COL-07	4.7	5.3	5.3
81	Prelude GLS	4.7	6.7	6.3
82	APR2099	4.7	6.3	5.7
83	APR2101	4.7	6.3	6.0
84	Edge II	4.7	4.7	5.0
85	06-K Lp	4.7	5.7	5.0
86	RAD-PR36	4.7	4.0	5.3
87	Radiant II	4.7	6.3	4.7
88	GM1 Comp	4.7	6.0	6.3
89	Sunshine 2	4.7	4.7	4.7
90	APR2069	4.6	4.7	5.7
91	PST-SYN-2RES	4.6	5.7	6.0
92	APR2117	4.6	7.0	8.0
93	06E Lp-A07	4.6	6.3	5.7
94	06-N Lp	4.6	4.7	4.7
95	RAD-PR34	4.6	5.3	6.0
96	Phenom	4.6	5.0	5.0
97	SR 4220	4.6	3.7	4.0
98	06-I Lp	4.6	5.0	4.3
99	RAD-PR23	4.6	5.0	5.3
100	PST-21N4	4.6	6.0	5.3
101	Repell GLS	4.6	5.7	6.3
102	Caddieshack II	4.5	5.7	6.3
103	RAD-PR54	4.5	4.7	5.3
104	PST-2GSB	4.5	4.7	5.7
105	PST 2101-07	4.5	5.3	5.3

(Continued)

Table 5 (continued).

	Cultivar or Selection	Turf Quality[1] 2008 Avg.	Crown Rust[2] Oct. 2007	Gray Leaf Spot[2] Oct. 2007
106	Keystone 2	4.5	5.7	6.0
107	LP1 Comp	4.5	7.0	7.3
108	RAD-PR38	4.5	4.3	4.7
109	Grand Slam 2	4.5	4.0	5.3
110	Palmer GLS	4.5	6.0	6.7
111	APR2077	4.4	4.7	4.7
112	APR2089	4.4	4.3	5.7
113	Blazer 4	4.4	4.3	5.0
114	PST-2TSE	4.4	5.0	6.7
115	Wizard II	4.4	5.3	4.3
116	06 H Lp	4.4	6.0	5.3
117	73-07-6	4.4	4.7	5.3
118	Integra II	4.4	5.0	4.7
119	Line Drive GLS	4.4	4.3	5.0
120	APR2080	4.3	4.3	4.3
121	Prelude IV	4.3	5.7	4.7
122	APR2095	4.3	5.3	4.7
123	PST-2COL	4.3	5.3	5.0
124	RAD-PR45	4.3	6.0	4.7
125	Revenge GLX	4.2	4.7	5.0
126	APR2075	4.2	4.3	5.0
127	APR2100	4.2	5.3	5.0
128	IS-PR 313	4.2	6.3	5.0
129	Gator 3	4.2	4.3	4.3
130	Harrier	4.2	6.3	6.3
131	SR 4420	4.2	4.0	4.7
132	06 E Lp-B07	4.2	5.3	5.3
133	Accent II	4.2	3.0	4.0
134	Mach 1	4.2	4.3	4.3
135	APR2086	4.1	3.7	5.3
136	APR 1915	4.1	4.3	5.3
137	73-07-1	4.1	6.0	5.0
138	Overdrive	4.1	5.0	5.3
139	APR2076	4.0	3.0	5.3
140	PST-2BLK-04	4.0	5.3	5.0

(Continued)

Table 5 (continued).

	Cultivar or Selection	Turf Quality[1] 2008 Avg.	Crown Rust[2] Oct. 2007	Gray Leaf Spot[2] Oct. 2007
141	APR2087	4.0	3.3	5.0
142	SR 4682	4.0	2.7	5.0
143	Citation Fore	4.0	5.0	6.0
144	PST-2TQL	3.9	5.3	4.3
145	Goalkeeper II	3.9	2.7	3.0
146	APR2068	3.9	4.7	4.7
147	73-07-9	3.9	4.3	4.0
148	Vail II	3.9	4.7	4.3
149	Headstart 2	3.8	3.7	3.7
150	Dart	3.8	3.7	4.7
151	IS-MBH2	3.7	3.3	4.3
152	61-07	3.7	4.3	5.3
153	APR2082	3.7	3.0	5.0
154	APR2094	3.7	5.0	4.7
155	Hawkeye	3.6	4.3	4.0
156	PR-27	3.6	3.7	4.7
157	73-07-5	3.6	4.3	4.0
158	SR 4500	3.5	3.0	4.3
159	73-07-7	3.5	5.7	4.0
160	73-07-10	3.4	4.7	4.3
161	Shining Star II	3.4	4.0	5.3
162	Calypso II	3.3	3.0	4.3
163	SR 4350	3.3	2.3	4.3
164	SRX 45LUP	3.2	3.7	3.0
165	Caddieshack	3.2	2.3	4.3
166	APR2093	3.2	3.3	5.0
167	Extreme	3.1	2.3	3.7
168	PST-2MAX-07	3.1	4.7	4.0
169	73-07-3	3.0	5.0	4.0
170	Accent	3.0	2.7	4.0
171	SRX 4STD	2.3	4.0	4.5
	LSD at 5% =	0.9	1.6	1.3

[1]9 = best turf quality
[2]9 = least disease

Table 6. Performance of perennial ryegrass cultivars and selections in a turf trial established in August 2007 at Adelphia, NJ. (Includes all entries evaluated in the Cooperative Turfgrass Breeders Test - CTBT.)

	Cultivar or Selection	Turf Quality[1] 2008 Avg.	Crown Rust[2] Oct. 2007	Establishment (%) Oct. 2007	Gray Leaf Spot[2] Oct. 2007
1	All*Star 3	6.6	7.7	83.3	7.7
2	SR 4600	6.3	7.0	85.0	7.3
3	GL-31	6.2	7.3	81.7	7.7
4	04-10 Lp	6.1	6.7	66.7	7.0
5	PST-2MG7 Bulk	6.0	6.7	76.7	6.7
6	APR2037	6.0	5.7	71.7	5.7
7	IS-PR 340	6.0	7.3	78.3	6.7
8	IS-PR 411	6.0	6.7	66.7	6.0
9	APR1979	5.8	6.3	76.7	6.3
10	IS-PR382	5.8	6.3	66.7	5.7
11	GL3	5.8	5.0	80.0	6.3
12	Palmer V	5.7	6.0	83.3	6.7
13	IS-PR 342	5.7	7.3	76.7	6.7
14	Paragon GLR	5.7	6.7	83.3	7.0
15	APR-1959	5.7	6.7	70.0	5.0
16	IS-PR 409	5.6	6.7	73.3	6.3
17	Soprano	5.6	6.3	80.0	7.0
18	APR2034	5.6	6.0	80.0	6.0
19	IGSquared	5.6	6.3	75.0	7.0
20	APR2032	5.6	5.7	81.7	6.7
21	APR2025	5.6	5.3	83.3	6.0
22	IS-PR 410	5.5	7.3	71.7	6.3
23	APR2033	5.5	6.3	75.0	7.0
24	IS-PR-381	5.5	6.3	73.3	6.3
25	Zoom	5.5	5.7	76.7	6.3
26	APR1980	5.5	7.0	73.3	6.3
27	APR2035	5.5	6.7	75.0	7.0
28	Dasher 3	5.4	6.7	76.7	8.0
29	IS-PR 341	5.4	7.0	70.0	7.0
30	Manhattan 5 GLR	5.4	6.3	88.3	7.3
31	06-C-Lp EDB	5.4	5.7	78.3	5.7
32	HP-1	5.4	7.0	81.7	7.0
33	Applaud II	5.3	6.7	76.7	6.3
34	PST-2GSB	5.3	5.3	75.0	6.7
35	Calypso III	5.3	5.0	80.0	5.3

(Continued)

Table 6 (continued).

	Cultivar or Selection	Turf Quality[1] 2008 Avg.	Crown Rust[2] Oct. 2007	Establishment (%) Oct. 2007	Gray Leaf Spot[2] Oct. 2007
36	04-4 Lp	5.3	4.3	80.0	4.3
37	Applaud	5.3	6.0	81.7	5.0
38	PST-2MAGS	5.3	7.7	68.3	7.3
39	IS-PR 377	5.3	5.7	71.7	6.0
40	APR2031	5.3	5.3	78.3	6.3
41	APR2036	5.2	7.3	70.0	6.0
42	LineDrive GLS	5.2	4.3	76.7	5.7
43	HU-1	5.2	6.3	80.0	6.3
44	APR2090	5.2	6.0	71.7	6.7
45	APR1978	5.2	4.7	78.3	6.3
46	APR2013	5.2	4.3	80.0	5.7
47	$ilver Dollar	5.1	5.3	66.7	5.0
48	PST-2AG4	5.1	5.3	66.7	6.3
49	A01PR Bulk	5.1	5.0	83.3	5.7
50	IS-PR 344	5.0	6.7	61.7	6.0
51	PST-2101-07	5.0	4.7	75.0	5.0
52	APR1666	5.0	6.3	78.3	5.7
53	APR2026	5.0	5.7	70.0	6.0
54	Jet	5.0	4.0	85.0	4.7
55	06-N Lp	5.0	5.7	73.3	5.3
56	06-B Lp	4.9	6.0	70.0	5.7
57	Pick EJ	4.9	4.0	71.7	4.3
58	Protege GLR	4.9	6.3	75.0	7.3
59	APR2038	4.8	5.7	78.3	6.7
60	PST-2USD	4.8	5.7	75.0	5.7
61	APR2096	4.8	6.3	68.3	4.0
62	APR2064	4.8	7.0	71.7	5.3
63	APR2089	4.8	5.3	70.0	5.7
64	APR1965	4.8	4.3	71.7	4.7
65	Gray Fox	4.8	4.0	80.0	5.7
66	PST-21NA	4.7	5.7	76.7	4.7
67	PST-Syn-2R57	4.7	5.0	60.0	5.7
68	PST-2TQL	4.7	5.0	58.3	4.7
69	PST-2NKMS	4.7	5.0	65.0	6.0
70	05-SP-1	4.7	4.7	63.3	5.0

(Continued)

Table 6 (continued).

	Cultivar or Selection	Turf Quality[1] 2008 Avg.	Crown Rust[2] Oct. 2007	Establishment (%) Oct. 2007	Gray Leaf Spot[2] Oct. 2007
71	PM 102	4.7	6.0	81.7	5.0
72	IS-PR 313	4.7	5.3	75.0	4.7
73	PST-2J15	4.7	4.0	76.7	5.3
74	APR2024	4.6	6.3	73.3	6.3
75	PST-2NJM	4.6	5.3	70.0	6.0
76	06-J Lp	4.6	5.7	61.7	4.7
77	06-K Lp	4.5	6.0	70.0	5.0
78	MD-07	4.5	6.0	75.0	4.7
79	Plateau	4.5	4.0	80.0	5.7
80	07-17 PR	4.5	5.3	60.0	5.3
81	PST-2TES	4.5	5.0	71.7	6.3
82	06-C-Lp ACF	4.5	6.3	75.0	5.7
83	06-H Lp	4.5	6.3	76.7	5.0
84	IS-PR 378	4.4	5.3	71.7	3.7
85	Integra II	4.4	5.0	78.3	5.3
86	Pizzazz	4.4	6.0	71.7	3.7
87	06-I Lp	4.4	5.3	50.0	3.7
88	PST-2R57S Bulk	4.4	4.7	71.7	5.7
89	PST-2R9J-05	4.4	4.7	76.7	4.7
90	APR1977	4.4	4.3	78.3	6.0
91	07-4 PR	4.4	5.3	75.0	5.0
92	07-13 PR	4.3	5.7	60.0	4.3
93	04-18 Lp	4.3	3.7	68.3	3.3
94	PST-2COL	4.1	4.7	63.3	5.3
95	07-5 PR	4.1	4.3	65.0	3.3
96	APR2075	4.1	3.7	66.7	5.3
97	PST-Syn-2US7	4.0	5.7	71.7	4.7
98	Prelude IV	3.8	6.0	76.7	3.7
99	06-Z Lp	3.8	3.7	78.3	5.7
100	07-15 PR	3.8	5.0	68.3	5.7
101	07-16 PR	3.8	4.3	66.7	3.3
102	PST-2SNS	3.8	5.0	73.3	5.3
103	MBH2	3.8	3.0	78.3	4.3
104	PST-Syn-2O4D	3.7	4.3	55.0	4.0
105	Penguin 2	3.6	4.0	81.7	4.3

(Continued)

Table 6 (continued).

	Cultivar or Selection	Turf Quality[1] 2008 Avg.	Crown Rust[2] Oct. 2007	Establishment (%) Oct. 2007	Gray Leaf Spot[2] Oct. 2007
106	07-12 PR	3.5	4.7	53.3	4.3
107	PST-Syn-2GR7	3.4	5.3	65.0	5.3
108	SRX 4TPCS	3.2	4.7	68.3	3.3
109	07-7 PR	3.1	6.7	63.3	2.7
110	SR 45 AB	2.7	3.7	63.3	3.3
111	Cutter	2.6	3.3	78.3	4.0
112	Manhattan II	2.4	3.3	80.0	3.7
113	PST-2MAX-07	2.3	4.0	50.0	2.7
	LSD at 5% =	0.7	1.6	14.3	1.4

[1]9 = best turf quality
[2]9 = least disease

Table 7. Yearly nitrogen (N) applied and mowing height (Ht) on perennial ryegrass tests established at Adelphia and North Brunswick, NJ.

	2004		2005		2006		2007		2008	
	N[1]	Ht[2]	N	Ht	N	Ht	N	Ht	N	Ht
Table 1 (2004 Adelphia)	1.3	1.5	4.0	1.5	4.5	1.5	3.3	1.5	2.8	1.5
Table 2 (2004 North Brunswick)	0.5	1.5	3.0	1.5	3.0	1.5	2.7	1.5	3.0	1.5
Table 3 (2005 Adelphia)			0.8	1.5	3.5	1.5	2.0	1.5	3.3	1.5
Table 4 (2006 Adelphia)					1.0	1.5	2.7	1.5	3.0	1.5
Table 5 (2007 Adelphia)							1.5	1.5	5.3	1.5
Table 6 (2007 Adelphia CTBT)							1.5	1.5	5.3	1.5

[1] Annual N applied (lb/1000 ft^2)
[2] Mowing height in inches

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