

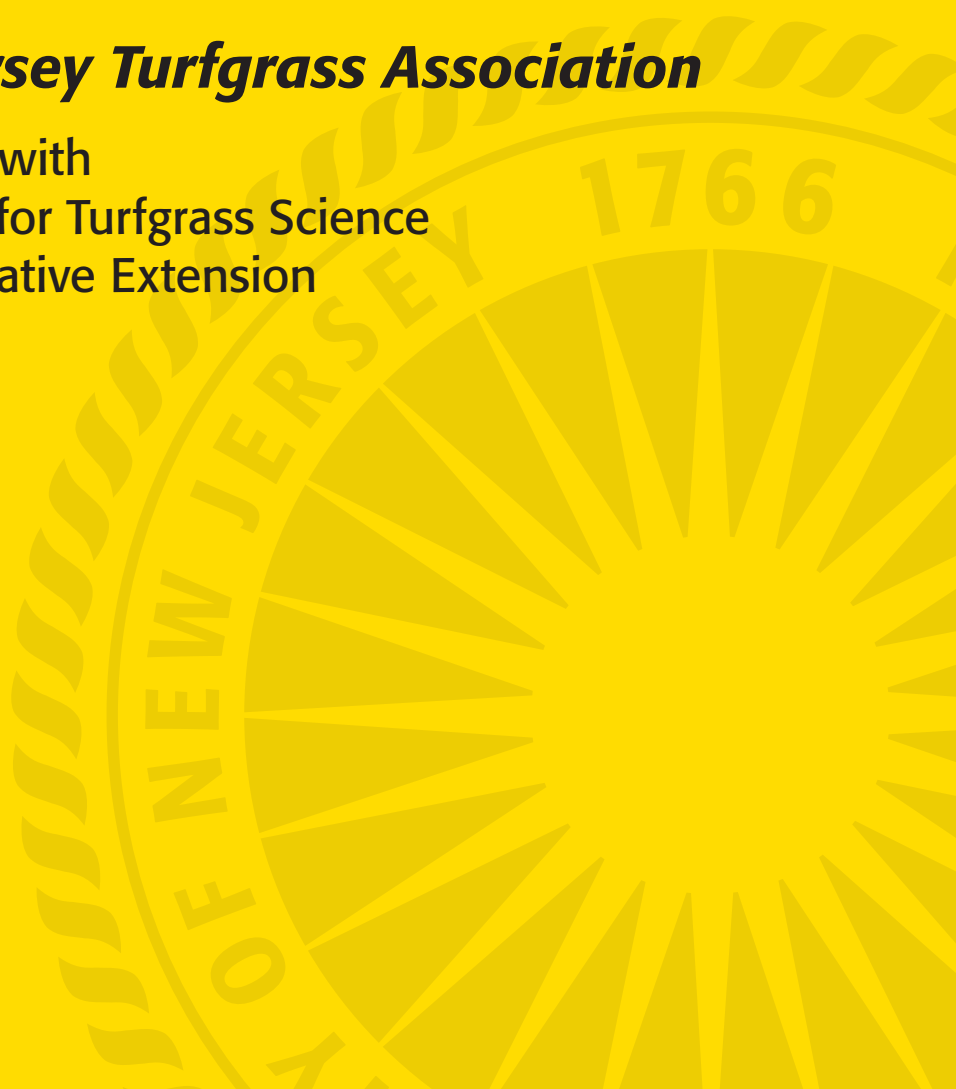
# RUTGERS

New Jersey Agricultural  
Experiment Station

## **2008 Turfgrass Proceedings**

***The New Jersey Turfgrass Association***

In Cooperation with  
Rutgers Center for Turfgrass Science  
Rutgers Cooperative Extension



# **2008 RUTGERS TURFGRASS PROCEEDINGS**

**of the**

**New Jersey Turfgrass Expo**

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**Trump Taj Mahal**

**Atlantic City, New Jersey**

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.

Special thanks are given to those who have submitted papers for this proceedings, to the New Jersey Turfgrass Association for financial assistance, and to Barbara Fitzgerald, Marlene Karasik, and Ann Diglio for administrative and secretarial support.

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

# PERFORMANCE OF TALL FESCUE CULTIVARS AND SELECTIONS IN NEW JERSEY TURF TRIALS

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Tall fescue (*Festuca arundinacea* Schreb.) is a cool-season grass native to Europe and parts of Africa (Buckner et al., 1979). Tall fescue was originally planted as a forage grass, and it was not until the release of the first tall fescue cultivars in the 1940s that its utility expanded to low maintenance situations. Although tall fescue thrives in a broad range of environments, due in large part to excellent heat and drought tolerance, these earlier cultivars lacked the overall turf quality needed for use in home lawns.

Tall fescue made its way into the turfgrass market with the release of the cultivar Rebel in 1979 (Funk et al., 1981). Since that time, turf breeders have improved the grass to produce cultivars with a darker color, finer leaf texture, lower growth habit, denser turf canopy, and increased resistance to disease (Watkins and Meyer, 2004). Recent tall fescue releases can now be used effectively for a number of medium-high maintenance turf situations including athletic fields, parks, home lawns, and roughs on some golf courses. The deep root system that tall fescue develops enables it to access soil moisture deep in the soil profile. This species is also widely adaptive to many soil types and does not require as many fertilizer inputs as most other cool-season turfgrasses. Many of the improved tall fescue cultivars are comparable to other cool-season turfgrass species in terms of turf quality at mowing heights of 1.5 inches and higher.

The current challenge facing tall fescue breeders is to improve disease resistance and the overall competitive nature of tall fescue cultivars. In the Rutgers Turfgrass Breeding Program, several research trials have been implemented to address these specific challenges. For example, the incorporation of endophytes into tall fescue cultivars has been a primary goal in recent years. Endophytes are fungi that live

in the leaf sheath and stem tissue of tall fescue plants and produce different alkaloids that have been shown to enhance plant tolerance to insect feeding (Funk et al., 1993). In other studies, inoculation and screening techniques have been implemented to improve tall fescue cultivars and selections for disease resistance as well as increased wear tolerance. To compliment the development of new selection techniques, plant breeders continue to collect germplasm with beneficial genes that can be incorporated into the breeding program.

## PROCEDURES

### Field Establishment and Maintenance

Four tall fescue trials were established at the Rutgers Plant Biology and Pathology Research and Extension Farm at Adelphia, NJ between 2005 and 2007 (Tables 1, 2, 3, and 4). All tests were established in September by hand sowing 0.88 oz of seed per 3 X 5 ft plot (3.7 lb/1000 ft<sup>2</sup>). All tests were arranged in a randomized complete block design with three replications, and each plot had a 6-inch unseeded border to limit contamination. Broadleaf weeds were controlled with spring or fall applications of 2,4-D, dicamba (Banvel), and MCPP. Dithiopyr (Dimension) was applied in the spring to control annual grassy weeds. In July metalaxyl (Subdue) was applied to prevent Pythium root disease.

Single applications of fertilizer did not exceed 1.0 lb nitrogen/1000 ft<sup>2</sup>. The amount and timing of nitrogen applied to the turf was varied to encourage disease and other stresses. Field trials were mowed regularly (approximately 2 to 3 times per week) with reel mowers to maintain a 1.5-inch height of cut. The

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annual rate of nitrogen applied as well as mowing height for each test is presented in Table 5. Based on soil test results, lime was applied as needed to maintain a pH of 6.0 to 6.5. Irrigation was applied to each test as needed to avoid wilting.

### Visual Assessment

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 ratings such as spring green-up, color, wear tolerance, density, and damage due to specific diseases were documented 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) means separation test.

### Inoculation

The 2006 and 2007 tall fescue tests (Tables 3 and 4) were screened for resistance to brown patch following field inoculation with two isolates of *Rhizoctonia solani* Kühn, the casual fungus of this disease. Inoculum was prepared by growing two isolates of *R. solani* on sterilized Kentucky bluegrass (*Poa pratensis* L.) seed following the method described by Bonos et al. (2003). The prepared inoculum was then placed in a drop spreader and applied to the field at a rate of 0.2 g/m<sup>2</sup> in the month of June. To ensure favorable conditions for disease development, light irrigation was applied to the field immediately after inoculation.

### Wear Application

A novel wear machine (Bonos et al., 2001) was used to apply wear uniformly over each turf plot in both tall fescue trials established in 2005 (Tables 1 and 2). The wear was applied to one-half of each turf plot, leaving the unworn half as a control. Wear was applied by passing the machine over each plot in one direction and then returning over each plot in the opposite direction. Wear was applied on 10, 19, and 24 June and 2, 7, and 16 July 2008. A total of 4 passes with the wear machine were applied on each

treatment date except for 2 July 2008 when only 2 passes were applied.

## RESULTS AND DISCUSSION

Results of the tall fescue tests are found in Tables 1 through 4. All tests are ranked by overall (multiple-year) turf quality averages. A high quality average is generally indicative of better disease resistance, a darker green color, greater turf density and uniformity, finer leaf texture, lower growth habit, improved mowing quality, and less damage due to insects.

### Turf Quality

Each year noticeable improvements in overall turf quality are evident in the latest generation of released cultivars of tall fescue. Advancements in color, leaf texture, and density by turf breeders have made tall fescue a suitable choice for most cool-season turfgrass situations. Cultivars such as 3rd Millennium, Falcon V, Shenandoah Elite, Shenandoah III, Cochise IV, and Faith performed consistently well in multiple trials. As tall fescue turf quality continually improves, turfgrass managers are encouraged to continually study all available data so that the best cultivars can be selected for each turf situation.

### Disease Resistance

Brown patch is a significant problem for tall fescue turfs in warm, humid environments. As yet, there are no turf-type tall fescue cultivars with complete resistance to this disease. When environmental conditions favoring disease development are present, some damage will be sustained by all available cultivars. This point is illustrated in the brown patch data recorded in Tables 3 and 4; while significant differences existed between cultivars and selections, each plot was affected by the disease to some degree. Cultivars such as Shenandoah III, Shenandoah Elite, and Faith displayed moderate to excellent resistance to brown patch in multiple trials.

### Wear Tolerance

One characteristic that limits the use of tall fescue turf in situations such as athletic fields is its slow recovery after traffic stress occurs. Identifying experimental selections and cultivars of tall fescue that are able to recover quickly from damage caused by wear would have a great impact on the utility of tall fescue. The wear tolerance of entries subject to

a total of 22 passes of a wear simulator is presented in Tables 1 and 2. Cultivars that performed best in both trials were Shenandoah III, Shenandoah Elite, and 3rd Millennium.

### Other Turf Characteristics

Characteristics that should not be overlooked when selecting cultivars include spring green-up, enhanced genetic color, and density. In 2008 trials, cultivars with the ability to quickly break dormancy and green up in the spring were Faith, Shenandoah III, Van Gogh, and Falcon IV (Table 3). Tall fescue cultivars with enhanced genetic color are suitable choices for mixtures with Kentucky bluegrass; Tombstone, Hunter, and Cochise IV were rated as having the darkest color (Table 3). Finally, cultivars that maintained a high rating for density in multiple trials were Shenandoah Elite and 3rd Millennium (Tables 1 and 2). Although Falcon NG and Shenandoah III also rated well for density, these entries were not evaluated in both trials.

### SUMMARY

As plant breeders continue to develop cultivars with improved turf quality and disease resistance, tall fescue is certain to be used more widely in the turf industry. Due to improvements in disease resistance, density, leaf texture, and color, tall fescue has become a more popular selection for many turfgrass situations. These improvements have also made it possible for tall fescue to be used effectively in mixtures with other turfgrass species, especially Kentucky bluegrass. Tall fescue performs better than most other cool-season turfgrasses under high temperature and low moisture conditions and requires fewer inputs. Endophyte-infected tall fescue cultivars are useful in certain stress situations and will continue to be studied. The major weakness of tall fescue is its susceptibility to brown patch, thus the Rutgers breeding program is focusing on developing cultivars that can better handle brown patch disease pressure.

### ACKNOWLEDGMENTS

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Table 1. Performance of tall fescue cultivars and selections in a turf trial established in September 2005 at Adelphia, NJ.

Cultivar or Selection	-----Turf Quality <sup>1</sup> -----				Wear <sup>2</sup> 2008 Avg.	Density <sup>3</sup> Aug. 2008
	2006- 2008 Avg.	2006 Avg.	2007 Avg.	2008 Avg.		
1 BB-2 Comp	6.9	6.8	6.8	7.0	7.3	7.0
2 RK-5 Comp	6.8	6.9	6.9	6.7	7.7	7.0
3 BB-5 Comp	6.8	6.8	7.0	6.6	7.3	7.0
4 Shenandoah Elite	6.7	6.9	6.7	6.6	8.0	7.3
5 2005-50/9407	6.6	6.7	6.5	6.6	6.7	6.7
6 RK-3 Comp	6.6	6.5	6.2	6.9	8.0	7.3
7 Van Gogh	6.5	6.6	6.5	6.5	6.7	7.0
8 Traverse SRP	6.5	6.3	6.8	6.5	7.7	7.0
9 RK-4 Comp	6.4	6.3	6.6	6.4	7.7	6.3
10 2005-50/9440	6.4	6.1	6.3	6.8	8.7	6.7
11 3rd Millennium SRP	6.4	6.4	6.6	6.3	6.3	6.7
12 2005-50/9460	6.4	6.0	6.4	6.7	7.3	6.3
13 Jamboree	6.4	5.7	6.8	6.6	7.3	7.3
14 IS-TF 152	6.3	6.0	6.3	6.7	6.3	6.7
15 BBM 6.3	6.7	5.8	6.4	7.7	6.7	
16 Shenandoah III	6.3	6.4	6.2	6.2	7.3	6.3
17 PST-Syn 5POL	6.2	6.3	6.2	6.2	7.3	6.7
18 BB-1 Comp	6.2	6.0	6.2	6.3	7.0	7.3
19 IS-TF 131	6.2	5.8	6.1	6.5	6.0	7.0
20 2005-50/9411	6.0	5.8	6.2	6.0	6.7	6.7
21 RAD-TF28	6.0	5.8	6.5	5.8	6.0	6.3
22 IS-TF 137	6.0	5.7	6.1	6.2	6.7	7.0
23 SR 8650	6.0	6.3	5.8	5.9	6.0	6.3
24 Turbo RZ	6.0	5.5	6.7	5.7	6.7	5.0
25 CE-3 5.9	6.4	5.7	5.7	7.0	5.0	

(Continued)

Table 1 (continued).

	Cultivar or Selection	-----Turf Quality <sup>1</sup> -----				Wear <sup>2</sup> 2008 Avg.	Density <sup>3</sup> Aug. 2008
		2006- 2008 Avg.	2006 Avg.	2007 Avg.	2008 Avg.		
26	IS-TF 139	5.9	5.9	6.0	5.7	5.0	6.0
27	IS-TF 135	5.9	6.0	6.1	5.5	7.0	5.3
28	PSG 44 Bulk-05	5.9	6.1	5.5	6.0	6.0	5.7
29	Tahoe II	5.8	5.9	5.9	5.6	5.7	5.7
30	PSG 39-Bulk-05	5.8	6.0	6.0	5.5	5.7	6.0
31	IS-TF 118	5.8	6.0	6.0	5.4	6.7	6.0
32	CRL Comp	5.8	6.3	5.6	5.4	6.7	5.7
33	PST-Syn 5MAC	5.8	5.8	6.0	5.6	6.7	5.7
34	PST-Syn 5DSL	5.8	5.7	5.7	5.9	5.7	6.0
35	Ninja 3	5.8	6.1	5.7	5.4	7.0	6.7
36	PSG 43-Bulk-05	5.8	6.1	5.6	5.6	5.7	5.7
37	Falcon NG	5.7	5.9	5.9	5.4	6.7	7.3
38	RAD-TF9	5.7	5.8	5.4	5.9	6.0	5.0
39	IS-TF 130	5.7	5.6	5.9	5.5	6.3	6.7
40	RAD-TF2	5.7	5.6	6.1	5.4	6.0	6.0
41	RAD-TF29	5.7	5.6	5.9	5.6	6.3	5.7
42	RAD-TF32	5.7	5.8	5.7	5.5	5.7	6.0
43	ATF 1234	5.7	5.5	5.8	5.7	6.3	5.7
44	Sidewinder	5.7	5.7	5.8	5.5	6.7	6.3
45	Falcon IV	5.7	6.1	6.0	4.9	6.3	5.3
46	RAD-TF22	5.7	5.4	5.8	5.8	5.7	6.7
47	Inferno	5.6	5.8	5.6	5.6	6.0	6.7
48	IS-TF 94	5.6	6.3	5.4	5.2	5.7	5.7
49	CE-4 Comp	5.6	6.1	5.3	5.4	6.3	5.3
50	DaVinci	5.6	6.1	5.2	5.4	6.0	5.7

(Continued)

Table 1 (continued).

Cultivar or Selection	-----Turf Quality <sup>1</sup> -----				Wear <sup>2</sup> 2008 Avg.	Density <sup>3</sup> Aug. 2008
	2006- 2008 Avg.	2006 Avg.	2007 Avg.	2008 Avg.		
51 Rocket	5.6	5.6	5.5	5.6	5.3	6.0
52 PSG 32-Bulk-05	5.6	5.6	5.2	5.9	5.3	6.3
53 RAD-TF34	5.6	5.6	5.9	5.1	5.7	6.0
54 PSG 33-Bulk-05	5.5	5.9	5.5	5.2	5.0	5.7
55 HonkyTonk	5.5	5.7	5.7	5.2	5.0	5.7
56 PST-Syn 5COR	5.5	6.0	5.3	5.3	5.7	6.0
57 ATF 1223	5.5	6.0	5.2	5.3	5.7	4.3
58 Guardian 21	5.5	6.0	5.4	5.1	4.7	5.3
59 RAD-TF21	5.5	5.3	5.6	5.6	6.0	5.0
60 IS-TF 132	5.5	5.5	5.4	5.5	6.3	6.0
61 RAD-TF19	5.5	5.5	5.7	5.3	6.0	5.0
62 SR 8550	5.5	6.0	5.5	5.0	5.0	5.7
63 ATF 1213	5.5	5.7	5.2	5.4	5.7	5.7
64 PST-Syn 5BGR	5.5	5.6	5.7	5.0	5.7	4.7
65 Bingo5.4	6.0	5.2	5.0	6.0	5.3	
66 ATF 1245	5.4	5.7	5.6	5.0	6.3	5.3
67 ATF 1236	5.4	5.7	5.3	5.2	6.0	5.0
68 PST-Syn 5DR5	5.4	5.6	5.4	5.2	6.0	4.7
69 ATF 1199	5.4	5.9	5.1	5.2	6.3	5.7
70 IS-TF 129	5.4	5.5	5.5	5.1	6.3	6.3
71 RAD-TF31	5.4	5.6	5.7	4.8	4.3	5.3
72 Rebel Advance	5.4	5.8	5.1	5.2	6.0	5.7
73 PSG 41-Bulk-05	5.4	5.5	5.1	5.5	5.0	6.7
74 RAD-TF16	5.3	5.5	5.2	5.3	5.0	4.7
75 STR GrandellRh	5.3	6.0	5.2	4.8	5.0	4.7

(Continued)



Table 1 (continued).

Cultivar or Selection	-----Turf Quality <sup>1</sup> -----				Wear <sup>2</sup> 2008 Avg.	Density <sup>3</sup> Aug. 2008
	2006- 2008 Avg.	2006 Avg.	2007 Avg.	2008 Avg.		
76 Innovator	5.3	5.7	5.1	5.1	5.3	5.3
77 ATF 1235	5.3	5.7	5.1	5.0	6.0	5.3
78 PST-Syn 5JAG	5.3	5.6	5.2	5.1	6.0	6.0
79 STR 8RhZ 8K	5.3	5.4	5.3	5.2	6.7	5.7
80 CE-2 Comp	5.3	6.0	5.1	4.7	6.0	5.0
81 PSG 36-Bulk-05	5.3	5.8	5.0	5.0	5.7	5.0
82 ATF 1200	5.2	5.3	5.1	5.3	7.3	5.0
83 Avenger	5.2	5.8	5.2	4.8	6.3	5.7
84 RAD-TF10	5.2	5.3	5.1	5.2	6.7	5.0
85 Raptor	5.2	5.7	4.8	5.1	6.0	5.7
86 PST-5BAB	5.2	5.6	5.1	4.9	5.3	5.0
87 PST-Syn 5MED	5.2	5.6	5.1	4.9	6.0	5.0
88 PSG 42-Bulk-05	5.2	5.9	4.5	5.1	4.3	5.3
89 RAD-TF33	5.2	5.2	5.2	5.1	5.3	5.7
90 STR 8RhZ 9K	5.2	5.8	5.0	4.7	5.3	5.3
91 Hounddog 6	5.1	5.7	4.9	4.7	5.0	5.7
92 Titanium	5.1	5.8	5.0	4.6	5.3	5.3
93 Apache III	5.1	6.0	4.9	4.4	4.7	4.3
94 ATF 1226	5.1	5.7	4.8	4.7	4.7	5.3
95 Cortez II	5.1	5.6	4.9	4.7	4.7	5.3
96 STR 8RhZ 1K	5.0	5.5	5.0	4.6	5.3	5.7
97 PSG 21-Bulk-05	5.0	5.7	4.7	4.7	5.0	5.0
98 Solara	5.0	5.4	5.0	4.6	5.3	4.3
99 Matador GT	5.0	6.0	4.8	4.2	4.0	4.7
100 Corgi 5.0	5.7	4.6	4.7	5.7	4.7	

(Continued)

Table 1 (continued).

	Cultivar or Selection	-----Turf Quality <sup>1</sup> -----				Wear <sup>2</sup> 2008 Avg.	Density <sup>3</sup> Aug. 2008
		2006- 2008 Avg.	2006 Avg.	2007 Avg.	2008 Avg.		
101	PSG 20-Bulk-05	5.0	5.0	5.0	5.0	5.7	4.7
102	Virtue II	5.0	5.4	4.7	4.9	4.7	5.0
103	STR 8600Rh	4.9	5.5	4.7	4.6	3.7	4.7
104	STR TitLtdRh	4.9	5.2	5.1	4.5	4.7	4.3
105	Cochise III	4.9	5.5	5.0	4.3	5.0	4.0
106	Blackwatch	4.9	5.8	4.6	4.3	5.7	4.3
107	PST-Syn 5MSD	4.9	5.0	4.8	5.0	5.0	4.3
108	STR 8RhZ 18K	4.9	5.1	4.9	4.8	6.0	6.0
109	Shenandoah Sport	4.9	5.2	4.8	4.6	4.3	5.7
110	Silverado II	4.9	5.8	4.5	4.4	5.0	3.7
111	03-5 TF#3-04	4.9	5.3	4.7	4.6	4.0	5.0
112	SRT DDMRh	4.8	5.2	4.6	4.7	4.3	4.3
113	Rembrandt	4.8	5.7	4.1	4.7	5.0	4.3
114	Cayenne	4.7	5.3	4.3	4.5	4.7	4.0
115	SR 8600	4.7	5.5	4.5	4.3	5.3	4.3
116	STR RenRh	4.7	5.8	4.3	4.1	5.0	4.7
117	ATF 1246	4.7	5.2	4.5	4.4	4.7	4.3
118	Silverstar	4.7	5.6	4.1	4.3	4.7	4.3
119	Blade Runner	4.7	5.4	4.3	4.3	4.3	5.0
120	Grande II	4.7	5.5	4.2	4.2	4.3	4.0
121	STR 8RhZ 13K	4.6	5.5	4.2	4.2	4.3	3.7
122	Ninja II	4.6	5.1	4.5	4.3	5.0	4.3
123	PSG 31-Bulk-05	4.6	4.8	4.6	4.5	5.0	5.5
124	Regiment II	4.6	5.3	4.5	4.0	4.3	5.0
125	STR 8RhZ 14K	4.6	5.4	4.2	4.2	4.3	4.7

(Continued)

Table 1 (continued).

	Cultivar or Selection	-----Turf Quality <sup>1</sup> -----				Wear <sup>2</sup> 2008 Avg.	Density <sup>3</sup> Aug. 2008
		2006- 2008 Avg.	2006 Avg.	2007 Avg.	2008 Avg.		
126	Picasso	4.6	5.3	4.2	4.2	5.0	4.3
127	PST-Syn 5SL5	4.5	5.1	4.1	4.4	5.3	3.7
128	STR 8Rhz 19K	4.5	5.4	3.9	4.2	5.3	5.0
129	STR Reg SRh	4.5	5.1	4.4	4.1	4.3	5.3
130	Arid 3	4.5	5.2	4.2	4.0	4.3	4.3
131	Jaguar 4	4.5	5.1	4.1	4.2	4.3	4.7
132	Masterpiece	4.5	5.2	4.0	4.2	4.7	4.3
133	Brockton	4.4	4.7	4.5	4.0	4.7	4.3
134	Constitution	4.4	5.3	3.9	4.0	3.7	4.3
135	PST-Syn 5DZ5	4.4	4.7	4.1	4.4	4.7	5.0
136	STR 8Rhz 10K	4.3	4.7	4.2	4.2	5.0	4.3
137	PST-Syn 5WP	4.3	4.7	4.3	3.9	4.3	4.7
138	Quest	4.3	5.1	4.1	3.7	4.3	3.7
139	PST-Syn 5SMG	4.2	4.8	3.9	4.0	4.0	4.0
140	Watchdog	4.2	5.1	3.9	3.5	4.7	3.7
141	PST-Syn 5SEG	4.1	4.5	3.8	4.1	3.3	4.3
142	Endeavor	4.1	4.7	4.0	3.7	4.3	3.3
143	PST-5Z5 Bulk	4.1	4.3	3.9	4.0	3.7	4.3
144	IS-TF 134	4.1	4.5	4.0	3.7	5.0	3.7
145	Expedition	4.1	4.8	3.5	3.9	4.3	3.7
146	IS-TF 112	4.0	4.5	3.9	3.7	4.0	4.3
147	PST-Syn 5ZR	4.0	4.3	3.7	4.0	4.0	4.7
148	ATF 1166	4.0	4.5	3.6	4.0	4.0	4.0
149	STR 8MO1	4.0	4.6	3.6	3.8	4.3	3.7
150	Tom Cat	4.0	4.6	3.5	3.7	4.3	4.0

(Continued)

Table 1 (continued).

Cultivar or Selection	-----Turf Quality <sup>1</sup> -----				Wear <sup>2</sup> 2008 Avg.	Density <sup>3</sup> Aug. 2008
	2006- 2008 Avg.	2006 Avg.	2007 Avg.	2008 Avg.		
151 PST-Syn 580Z	3.9	4.7	3.5	3.6	4.0	4.0
152 PST-Syn 525G	3.8	4.4	3.7	3.3	3.7	3.7
153 Titan Ltd.	3.8	4.7	3.2	3.4	4.0	4.3
154 Pixie 3.7	4.6	3.2	3.4	4.0	3.7	
155 Tulsa II	3.7	4.4	3.4	3.3	4.0	3.3
156 PST-53X Bulk	3.6	4.0	3.3	3.6	4.0	3.7
157 Jaguar 3	3.5	4.1	3.2	3.2	4.0	3.7
158 Falcon III	3.3	4.1	2.7	3.2	4.0	3.7
159 KY-31	1.1	1.0	1.0	1.2	1.0	1.0
LSD at 5% =	0.6	0.7	0.9	0.7	1.5	1.4

<sup>1</sup>9 = best turf quality

<sup>2</sup>9 = least damage due to wear (22 passes applied using a novel wear simulator)

<sup>3</sup>9 = least disease

Table 2. Performance of tall fescue cultivars and selections in a turf trial established in September 2005 at Adelphia, NJ. (Includes all entries in the Tall Fescue Cooperative Turfgrass Breeders Test - CTBT.)

Cultivar or Selection	-----Turf Quality <sup>1</sup> -----				Density <sup>2</sup> 2008 Avg.	Wear <sup>3</sup> Aug. 2008
	2006- 2008 Avg.	2006 Avg.	2007 Avg.	2008 Avg.		
1 3rd Millennium SRP	6.4	6.5	6.2	6.6	7.7	5.3
2 Shenandoah Elite	6.0	5.9	5.9	6.1	7.3	5.7
3 Shenandoah III	6.0	5.6	6.0	6.2	8.0	6.0
4 Toccoa	5.9	5.7	5.6	6.5	6.3	5.3
5 IS-TF-152	5.8	5.9	5.8	5.8	6.7	5.0
6 Sidewinder	5.8	5.5	5.8	5.9	6.3	5.3
7 SR 8650	5.6	5.5	5.7	5.4	6.7	5.3
8 Jamboree	5.5	5.1	5.3	6.0	7.7	5.3
9 Falcon IV	5.5	5.7	5.2	5.5	5.3	5.3
10 IS-TF-135	5.5	5.6	5.4	5.4	6.0	4.7
11 IS-TF-94	5.3	5.9	4.9	5.2	5.0	4.0
12 Rocket	5.3	5.1	4.8	5.9	7.3	5.0
13 IS-TF-137	5.2	5.1	4.9	5.7	6.0	5.3
14 PSG 43-05	5.2	5.4	5.0	5.2	6.7	5.0
15 Shenandoah Sport	5.2	5.4	5.1	5.1	5.3	4.3
16 IS-TF-130	5.2	4.9	5.1	5.5	6.0	4.3
17 IS-TF-139	5.2	5.4	4.9	5.2	5.0	4.0
18 ATF1213	5.1	5.2	4.8	5.4	5.3	4.3
19 IS-TF-118	5.1	5.3	4.9	5.0	5.7	4.7
20 ATF1040	5.0	5.4	4.8	4.9	4.7	4.0
21 ATF1234	5.0	5.1	4.9	5.1	5.7	5.0
22 IS-TF-131	5.0	5.2	4.6	5.2	6.3	5.0
23 ATF1235	5.0	5.0	4.9	5.0	5.3	5.3
24 ATF1226	5.0	5.2	4.9	4.8	5.0	5.0
25 ATF1236	4.9	5.0	4.7	5.2	6.3	4.7

(Continued)

Table 2 (continued).

Cultivar or Selection	-----Turf Quality <sup>1</sup> -----				Density <sup>2</sup> 2008 Avg.	Wear <sup>3</sup> Aug. 2008
	2006- 2008 Avg.	2006 Avg.	2007 Avg.	2008 Avg.		
26 PSG 41-05	4.9	5.0	4.8	5.0	6.0	4.7
27 ATF1223	4.8	5.2	4.5	4.8	5.0	4.0
28 ATF1245	4.8	4.8	4.7	5.0	5.0	4.0
29 PST-5KB	4.8	4.9	4.8	4.8	6.0	4.3
30 ATF1220	4.8	4.9	4.8	4.7	5.3	5.3
31 IS-TF-129	4.8	4.9	4.5	4.9	5.3	4.7
32 Ninja 3	4.7	4.6	4.5	5.1	5.7	4.3
33 Coronado TDH	4.7	4.8	4.4	4.9	5.3	5.3
34 IS-TF-80	4.7	5.4	4.4	4.3	4.7	4.0
35 Endeavor II	4.6	4.6	4.5	4.7	6.7	5.3
36 Houndog VI	4.6	5.0	4.7	4.1	4.3	3.3
37 ATF1200	4.6	4.6	4.2	5.0	6.0	5.0
38 PST-SYN-5DVD	4.6	4.2	4.3	5.1	6.3	4.7
39 IS-TF-133	4.5	4.5	4.3	4.8	5.0	4.3
40 PST-5LIV	4.5	4.7	4.4	4.5	5.3	4.7
41 PST-SYN-5L13-05	4.5	5.0	4.3	4.3	5.7	4.3
42 ATF1199	4.5	4.6	4.2	4.6	5.7	4.0
43 PST-SYN-R5B4	4.4	4.6	4.2	4.5	5.3	4.3
44 Rebel Advance	4.3	4.4	4.1	4.4	4.7	4.3
45 Grande II	4.2	4.9	3.6	4.1	4.7	4.0
46 ATF1214	4.1	4.4	3.7	4.2	4.3	3.3
47 PST-SYN-5IL5	4.0	4.0	3.8	4.1	4.7	4.7
48 Tar Heel II	3.9	4.4	3.9	3.5	5.0	4.3
49 ATF1218	3.8	4.2	3.9	3.3	3.7	3.7
50 IS-TF-134	3.7	3.7	3.8	3.6	4.3	3.3

(Continued)

Table 2 (continued).

Cultivar or Selection	-----Turf Quality <sup>1</sup> -----				Density <sup>2</sup> 2008 Avg.	Wear <sup>3</sup> Aug. 2008
	2006- 2008 Avg.	2006 Avg.	2007 Avg.	2008 Avg.		
51 ATF1246	3.6	3.8	3.4	3.4	4.3	4.3
52 Rhizing Star	3.3	3.4	3.2	3.3	4.3	4.3
53 Water Saver	3.2	3.2	3.2	3.3	3.7	3.3
54 KY-31	1.0	1.1	1.0	1.0	1.3	2.3
LSD at 5% =	0.4	0.6	0.6	0.6	1.2	1.3

<sup>1</sup>9 = best turf quality

<sup>2</sup>9 = densest turf

<sup>3</sup>9 = least damage due to wear (22 passes applied using a novel wear simulator)

Table 3. Performance of tall fescue cultivars and selections in a turf trial established in September 2006 at Adelphia, NJ. (Includes all entries in the 2006 National Tall Fescue Test sponsored by NTEP.)

Cultivar or Selection	-----Turf Quality <sup>1</sup> -----			Spring Green-up <sup>2</sup> 2007 Avg.	Color <sup>3</sup> 2007 Avg.	Brown Patch <sup>4</sup> Aug. 2007
	2007-2008 Avg.	2007 Avg.	2008 Avg.			
1 Faith	6.8	6.7	7.0	8.3	7.0	6.0
2 SP2 comp	6.8	6.6	7.0	8.7	7.3	6.0
3 Cochise IV	6.8	6.5	7.0	6.7	8.0	5.3
4 SP1 comp	6.5	6.5	6.4	7.0	6.0	7.0
5 DP 50-9440	6.3	6.2	6.4	4.7	6.3	5.3
6 Jamboree	6.1	5.9	6.2	5.0	5.7	6.0
7 Falcon V	6.1	5.7	6.4	7.0	6.3	5.7
8 IS-TF-159	6.1	6.0	6.1	4.3	6.7	7.0
9 SC-1	6.1	5.7	6.5	7.0	7.7	5.7
10 ATF 1354	6.1	5.7	6.4	6.7	7.7	7.3
11 ATF 1352	6.0	5.7	6.4	6.7	4.7	7.3
12 Monet	6.0	5.6	6.5	5.7	6.3	6.3
13 Van Gogh	6.0	5.8	6.2	7.0	7.0	6.3
14 Firecracker LS	6.0	5.7	6.2	6.0	6.7	6.3
15 Bonanza II	5.9	5.6	6.2	6.0	6.3	6.7
16 RK 4	5.9	5.8	6.1	6.0	7.0	6.3
17 Shenandoah Elite	5.9	5.7	6.1	4.7	6.3	6.3
18 RK 5	5.9	5.6	6.1	6.0	6.0	6.0
19 IS-TF 137	5.8	5.9	5.7	3.7	7.3	5.7
20 PSG 75-A-06	5.8	5.9	5.8	4.0	7.3	5.3
21 Rhambler SRP	5.8	5.6	6.1	6.3	7.0	7.3
22 Turbo	5.8	5.4	6.3	6.0	7.3	6.0
23 ATF 1353	5.8	5.4	6.2	6.0	6.7	5.7
24 Hemi	5.8	5.5	6.1	6.3	6.7	6.0
25 Fat Cat	5.8	5.9	5.7	3.3	7.0	5.0

(Continued)



Table 3 (continued).

	Cultivar or Selection	-----Turf Quality <sup>1</sup> -----			Spring Green-up <sup>2</sup> 2007 Avg.	Color <sup>3</sup> 2007 Avg.	Brown Patch <sup>4</sup> Aug. 2007
		2007- 2008 Avg.	2007 Avg.	2008 Avg.			
26	Firenza	5.8	5.7	5.9	5.7	7.0	5.7
27	Six Point	5.8	5.8	5.7	5.7	5.3	6.0
28	RNP	5.8	6.2	5.3	4.7	7.0	5.7
29	3rd Millennium SRP	5.8	5.8	5.7	5.3	7.0	6.3
30	STR-8BPDX	5.8	5.6	5.9	5.7	5.0	6.3
31	Bullseye	5.7	5.3	6.2	4.0	7.0	5.7
32	Shenandoah III	5.7	5.3	6.2	7.0	7.0	6.3
33	Traverse SRP	5.7	5.4	6.0	5.3	7.0	7.0
34	Finelawn Xpress	5.7	5.8	5.6	6.0	6.3	6.3
35	PSG 77-C-06	5.7	5.4	6.0	4.7	6.0	5.3
36	IS-TF-152	5.7	5.9	5.4	3.0	7.0	6.0
37	DP 50-9407	5.7	5.6	5.7	4.7	6.3	6.0
38	AR4 comp	5.6	6.1	5.2	4.7	6.0	4.0
39	Essential	5.6	5.3	5.9	4.7	6.0	5.3
40	PST-Syn-5DZP	5.6	5.9	5.4	4.7	6.3	5.7
41	TG 50-9460	5.6	5.5	5.8	6.0	5.7	6.7
42	Toccoa	5.6	5.6	5.7	3.3	7.3	6.0
43	Aggressor	5.6	5.5	5.7	4.0	5.3	4.7
44	Mustang 4	5.6	5.7	5.5	5.3	7.7	6.0
45	NA-BT-1	5.6	5.2	5.9	6.0	3.3	6.7
46	AST-1	5.6	6.0	5.2	3.0	7.7	5.3
47	Sidewinder	5.6	5.5	5.6	2.7	7.0	5.3
48	ATF 1199	5.6	5.8	5.3	5.3	5.0	7.0
49	CO3 comp	5.6	5.6	5.5	5.0	6.3	6.7
50	ATF 1328	5.5	5.7	5.3	5.0	7.3	6.0

(Continued)

Table 3 (continued).

Cultivar or Selection	-----Turf Quality <sup>1</sup> -----			Spring Green-up <sup>2</sup>	Color <sup>3</sup>	Brown Patch <sup>4</sup>
	2007-2008 Avg.	2007 Avg.	2008 Avg.	2007 Avg.	2007 Avg.	Aug. 2007
51 BGR-TF2	5.5	5.8	5.2	4.0	8.0	6.3
52 PSG 23-06	5.5	5.5	5.5	5.3	6.0	5.3
53 PSG 55-B-06	5.5	5.9	5.2	5.0	5.7	4.0
54 Spyder LS	5.5	5.6	5.5	4.7	7.0	4.3
55 PSG 55-C-06	5.5	5.6	5.4	4.0	6.3	5.3
56 ATF 1245	5.5	5.5	5.5	5.0	5.7	6.0
57 ATF 1284	5.5	5.7	5.3	4.3	5.0	5.7
58 BGR-TF1	5.5	5.8	5.2	3.0	8.7	5.3
59 RAD-TF33	5.5	5.6	5.4	5.3	6.0	6.3
60 IS-TF-135	5.5	5.7	5.3	2.0	5.7	5.7
61 KZ-1	5.5	5.8	5.2	3.3	7.7	5.7
62 Talladega	5.5	5.6	5.4	3.3	6.3	6.7
63 PSG 21-AB-06	5.5	5.4	5.6	3.7	6.0	4.7
64 PSG 67-C-06	5.5	5.5	5.4	3.7	7.0	4.7
65 ATF 1329	5.5	5.4	5.5	3.3	6.7	6.0
66 CE3 comp	5.5	5.2	5.7	5.0	6.3	6.0
67 JT-45	5.5	5.8	5.1	3.0	5.3	4.7
68 RAD-TF28	5.5	5.5	5.4	6.0	6.3	5.7
69 Wolfpack II	5.5	5.3	5.6	6.3	6.0	6.3
70 AST-3	5.4	5.9	5.0	3.3	7.3	6.7
71 BBM	5.4	5.1	5.8	3.7	6.0	5.0
72 PSG 67-B-06	5.4	5.4	5.4	4.3	6.7	4.7
73 Raptor II	5.4	5.4	5.4	2.0	6.0	6.0
74 ATF 1346	5.4	5.5	5.3	6.3	6.3	5.7
75 CS-TF1	5.4	5.6	5.2	3.7	8.3	5.3

(Continued)

Table 3 (continued).

Cultivar or Selection	-----Turf Quality <sup>1</sup> -----			Spring Green-up <sup>2</sup>	Color <sup>3</sup>	Brown Patch <sup>4</sup>
	2007-2008 Avg.	2007 Avg.	2008 Avg.	2007 Avg.	2007 Avg.	Aug. 2007
76 IS-TF 160	5.4	5.5	5.4	4.0	6.3	5.3
77 PST-Syn-56Y	5.4	5.5	5.3	5.3	5.0	6.3
78 Tulsa Time	5.4	5.6	5.2	3.7	7.0	6.7
79 ATF 1324	5.4	5.3	5.5	3.7	6.3	5.3
80 Inferno	5.4	5.8	5.0	4.0	6.7	5.7
81 MVS 3609	5.4	5.4	5.3	3.3	5.7	5.0
82 PST-5SXY Bulk	5.4	5.0	5.7	4.0	5.7	5.0
83 LS-03	5.4	5.2	5.5	3.0	8.0	4.7
84 AR2 comp	5.3	5.3	5.3	4.3	7.0	5.3
85 JT-41	5.3	5.4	5.3	4.0	5.3	5.7
86 STR 8 Rhz 8K	5.3	5.2	5.5	3.7	6.7	7.0
87 DP 50-9411	5.3	5.0	5.6	4.3	7.3	5.7
88 AR3 comp	5.3	5.4	5.2	5.0	5.0	5.3
89 CE 4	5.3	5.5	5.1	4.0	3.7	6.0
90 Justice	5.3	5.1	5.5	5.0	6.0	6.3
91 LS-06	5.3	5.4	5.2	4.0	8.3	5.3
92 LS-11	5.3	5.8	4.8	3.7	8.3	4.3
93 5KB	5.3	5.5	5.0	3.0	5.7	4.7
94 IS-TF 118	5.3	5.3	5.3	2.7	8.7	6.3
95 Rocket	5.3	5.1	5.4	3.0	5.3	5.3
96 BAR Fa 6253	5.3	4.9	5.6	5.3	8.0	6.3
97 Col-J	5.3	5.6	4.9	4.0	8.3	5.7
98 J-130	5.3	5.2	5.3	3.3	7.0	5.7
99 MVS-BB-1	5.3	5.1	5.4	4.3	5.7	5.0
100 Ninja 3	5.3	5.3	5.2	4.0	7.0	4.3

(Continued)

Table 3 (continued).

Cultivar or Selection	-----Turf Quality <sup>1</sup> -----			Spring Green-up <sup>2</sup> 2007 Avg.	Color <sup>3</sup> 2007 Avg.	Brown Patch <sup>4</sup> Aug. 2007
	2007- 2008 Avg.	2007 Avg.	2008 Avg.			
101 PST-5DVD Bulk	5.2	5.1	5.4	4.3	4.7	5.0
102 Dynamic II	5.2	5.0	5.4	4.0	4.7	6.0
103 GWTF	5.2	5.6	4.8	4.0	6.7	5.3
104 J-140	5.2	5.1	5.3	4.0	5.7	6.0
105 DaVinci	5.2	5.2	5.2	5.0	5.0	5.3
106 RAD-TF31	5.2	5.0	5.4	4.7	7.0	4.7
107 SR 8650	5.2	5.3	5.0	3.7	6.3	6.0
108 Cortez II	5.2	5.2	5.1	3.3	7.0	6.0
109 GE-1	5.2	5.1	5.2	4.7	5.0	6.0
110 NA-SS	5.2	5.4	4.9	4.3	6.7	4.7
111 STR 86QRH	5.2	4.9	5.4	4.0	5.7	5.7
112 ATF 1325	5.1	5.3	5.0	2.7	6.0	6.0
113 Cezane RZ	5.1	5.0	5.2	4.0	6.0	6.0
114 IS-TF 155	5.1	5.5	4.8	3.3	7.0	4.7
115 RAD-TF27	5.1	5.3	5.0	4.3	6.0	5.7
116 RAD-TF29	5.1	5.2	5.1	3.0	5.3	5.0
117 MVS-341	5.1	5.2	5.0	4.3	5.7	5.7
118 Hunter	5.1	5.7	4.5	2.7	8.3	5.7
119 AST 7003	5.1	5.5	4.6	3.7	7.7	4.7
120 ATF 1321	5.1	5.1	5.0	3.7	4.7	6.0
121 PSG-85QR	5.1	4.8	5.3	4.7	6.0	6.0
122 ATF-1199	5.1	5.0	5.1	4.3	6.0	6.3
123 IS-TF 129	5.1	5.3	4.8	3.0	7.0	5.7
124 Rebel IV	5.1	5.1	5.0	5.0	6.0	6.7
125 AST 7002	5.1	5.1	5.0	3.7	8.3	5.0

(Continued)

Table 3 (continued).

Cultivar or Selection	-----Turf Quality <sup>1</sup> -----			Spring Green-up <sup>2</sup>	Color <sup>3</sup>	Brown Patch <sup>4</sup>
	2007-2008 Avg.	2007 Avg.	2008 Avg.	2007 Avg.	2007 Avg.	Aug. 2007
126 AST-4	5.1	5.1	5.0	3.0	6.7	5.3
127 ATF 1334	5.1	5.0	5.1	2.3	6.3	6.0
128 Falcon IV	5.1	5.2	4.9	4.3	4.7	5.7
129 PSG-TTRH	5.1	5.1	5.0	4.0	5.7	5.0
130 SR 8600	5.1	5.4	4.7	6.3	4.0	5.7
131 Bingo	5.0	5.4	4.7	5.7	5.3	6.3
132 Escalade	5.0	4.8	5.3	4.0	6.0	5.0
133 JT-42	5.0	5.1	5.0	2.3	4.7	5.0
134 Tombstone	5.0	5.2	4.8	4.0	8.7	5.0
135 Col-M	5.0	5.3	4.7	3.0	8.3	5.3
136 ATF 1357	5.0	5.0	5.0	4.0	5.3	5.3
137 R5W3	5.0	4.8	5.2	5.3	4.0	6.0
138 ATF 1330	5.0	5.0	4.9	4.3	6.3	4.0
139 ATF 1344	5.0	5.0	5.0	3.7	5.7	5.3
140 KZ-2	5.0	5.3	4.7	2.7	7.3	5.3
141 PSG 19-r3-06	5.0	5.1	4.9	2.7	7.7	4.0
142 ATF 1327	5.0	5.0	4.9	3.3	6.3	6.7
143 Einstein	5.0	4.9	5.0	4.3	6.7	6.7
144 Hounddog 6	5.0	5.3	4.6	3.3	6.0	6.0
145 JT-33	5.0	5.2	4.7	4.0	7.0	4.3
146 Prospect	5.0	5.2	4.7	5.3	4.7	6.0
147 Titanium	5.0	5.1	4.8	4.7	4.3	5.7
148 AST 7001	5.0	5.3	4.6	2.3	8.7	4.7
149 PSG 19 r4-06	5.0	5.0	4.9	3.0	7.7	5.0
150 PSG 62-A-06	5.0	5.0	4.9	3.7	6.0	5.7

(Continued)

Table 3 (continued).

Cultivar or Selection	-----Turf Quality <sup>1</sup> -----			Spring Green-up <sup>2</sup>	Color <sup>3</sup>	Brown Patch <sup>4</sup>
	2007-2008 Avg.	2007 Avg.	2008 Avg.	2007 Avg.	2007 Avg.	Aug. 2007
151 PST-5H20 Bulk	5.0	4.9	5.0	4.0	4.7	5.3
152 PST-Syn-5WPM	5.0	4.8	5.1	6.0	3.7	6.0
153 RAD-TF40	5.0	5.2	4.7	3.0	7.3	4.7
154 Rebel Advance	5.0	4.9	5.0	5.3	5.7	5.7
155 ATF 1112	4.9	5.0	4.9	4.7	6.0	5.0
156 ATF 1360	4.9	5.0	4.9	4.0	6.7	4.7
157 PST-5JG6 Bulk	4.9	4.8	5.0	5.0	3.0	5.0
158 ATF 1248	4.9	5.0	4.9	4.0	6.3	5.7
159 Avenger	4.9	5.1	4.7	4.7	5.7	5.0
160 CE 2	4.9	5.0	4.8	4.7	5.0	6.3
161 MVS 1200	4.9	4.9	5.0	6.0	4.7	4.7
162 ATF 1331	4.9	5.1	4.7	2.7	7.0	5.3
163 ATF 1338	4.9	4.8	5.0	2.7	5.3	6.3
164 ATF 1358	4.9	5.0	4.8	5.3	5.3	6.0
165 CO2 comp	4.9	4.9	4.9	5.0	5.0	5.0
166 Innovator	4.9	5.0	4.8	4.7	5.0	7.0
167 PSG 20-r4-06	4.9	5.1	4.7	2.7	6.0	5.0
168 STR-8BB5	4.9	4.9	4.9	4.7	5.3	5.7
169 5BGR-06	4.9	4.5	5.3	5.0	5.0	6.0
170 Apache III	4.9	4.8	4.9	4.0	4.3	6.0
171 Blackwatch	4.9	5.1	4.7	4.7	7.0	5.3
172 Cochise III	4.9	5.2	4.6	3.3	5.3	6.0
173 PSG 18-A-06	4.9	5.0	4.8	4.0	4.7	5.7
174 RAD-TF32	4.9	4.9	4.9	4.3	6.0	6.0
175 Rebel Exceda	4.9	4.9	4.9	4.7	5.7	6.3

(Continued)

Table 3 (continued).

Cultivar or Selection	-----Turf Quality <sup>1</sup> -----			Spring Green-up <sup>2</sup>	Color <sup>3</sup>	Brown Patch <sup>4</sup>
	2007-2008 Avg.	2007 Avg.	2008 Avg.	2007 Avg.	2007 Avg.	Aug. 2007
176 ATF 1323	4.9	5.2	4.6	3.7	4.3	6.7
177 Finelawn Elite	4.9	5.0	4.7	5.7	5.3	4.7
178 5LIV	4.9	4.8	4.9	4.0	4.7	6.7
179 AR1 comp	4.9	4.6	5.1	3.7	5.7	5.3
180 JT-36	4.9	4.7	5.0	2.3	5.7	5.3
181 PST-5HP	4.9	4.5	5.2	3.0	5.3	5.0
182 Tuxedo	4.9	5.1	4.6	3.0	6.3	5.7
183 5V4	4.8	4.8	4.9	4.3	4.7	6.0
184 PSG 19-r8-06	4.8	5.0	4.6	4.0	7.0	5.3
185 Skyline	4.8	5.0	4.7	3.3	5.3	5.0
186 Brockton	4.8	5.2	4.5	4.7	6.3	4.3
187 Guardian 21	4.8	5.0	4.6	4.0	5.7	6.0
188 ATF 1326	4.8	5.3	4.3	1.3	6.3	5.7
189 BAR Fa 6363	4.8	5.0	4.6	4.7	6.7	6.0
190 Col-1	4.8	5.0	4.6	2.7	6.7	4.3
191 Scorpion II	4.8	5.0	4.6	3.7	6.3	5.7
192 Tahoe II	4.8	5.0	4.6	1.7	7.7	5.3
193 ATF 1200	4.8	4.9	4.7	5.3	5.3	5.7
194 PSG 20 bulk-06	4.8	5.0	4.6	4.0	6.3	4.7
195 Raptor	4.8	5.3	4.2	3.3	6.7	5.3
196 Turbo RZ	4.8	4.6	5.0	5.0	5.0	5.7
197 PSG-82BR	4.8	4.7	4.9	5.0	5.3	5.7
198 ATF 1345	4.8	4.8	4.7	4.0	5.7	4.7
199 AST-2	4.7	5.0	4.5	2.3	7.0	5.3
200 ATF 1333	4.7	4.8	4.7	2.3	6.3	6.3

(Continued)

Table 3 (continued).

Cultivar or Selection	-----Turf Quality <sup>1</sup> -----			Spring Green-up <sup>2</sup> 2007 Avg.	Color <sup>3</sup> 2007 Avg.	Brown Patch <sup>4</sup> Aug. 2007
	2007- 2008 Avg.	2007 Avg.	2008 Avg.			
201 PSG 20-r5-06	4.7	4.8	4.6	3.0	7.3	5.0
202 ATF 1283	4.7	5.0	4.4	4.7	5.7	5.3
203 ATF 1332	4.7	5.1	4.3	3.0	6.3	5.3
204 Matador GT	4.7	4.8	4.6	3.0	5.3	5.7
205 0312	4.7	5.0	4.4	3.3	7.0	4.3
206 5R56	4.7	4.6	4.8	3.3	3.7	6.3
207 ATF 1318	4.7	5.0	4.4	3.7	5.0	5.3
208 ATF 1320	4.7	4.9	4.5	4.0	3.3	6.0
209 Endeavor II	4.7	4.7	4.7	4.7	4.0	5.3
210 PSG 19 bulk-06	4.7	4.9	4.5	3.3	8.0	4.7
211 PSG 9-A-06	4.7	4.8	4.6	3.0	6.0	4.7
212 ATF 1336	4.7	4.7	4.6	2.7	5.0	6.0
213 ATF 1339	4.7	5.1	4.2	2.0	6.3	5.7
214 DKS	4.7	4.7	4.7	2.7	8.0	4.7
215 Falcon NG	4.7	4.6	4.8	5.7	5.0	5.7
216 PSG 19-r5-06	4.7	5.0	4.4	3.7	7.0	4.0
217 SR 8550	4.7	4.8	4.5	1.7	6.0	5.0
218 STR 8GRQR	4.7	4.6	4.8	6.0	6.3	5.7
219 06-DUST	4.7	4.4	5.0	5.0	6.7	6.3
220 ATF 1262	4.7	4.7	4.6	5.0	5.7	5.0
221 Padre	4.7	4.6	4.7	4.7	4.0	6.0
222 PSG 19-r2-06	4.7	4.6	4.7	3.7	7.0	5.3
223 Silverstar	4.7	4.8	4.5	5.0	5.0	5.7
224 STR Tit QR	4.7	4.7	4.6	3.3	4.3	5.7
225 ATF 1335	4.6	4.8	4.5	2.7	5.0	4.7

(Continued)



Table 3 (continued).

	Cultivar or Selection	-----Turf Quality <sup>1</sup> -----			Spring Green-up <sup>2</sup> 2007 Avg.	Color <sup>3</sup> 2007 Avg.	Brown Patch <sup>4</sup> Aug. 2007
		2007- 2008 Avg.	2007 Avg.	2008 Avg.			
226	ATF 1341	4.6	4.6	4.6	3.0	6.7	6.3
227	ATF 1342	4.6	4.9	4.3	3.0	5.3	5.0
228	Forte	4.6	4.9	4.4	4.0	6.0	6.3
229	ATF 1343	4.6	4.9	4.3	1.7	6.7	5.0
230	ATF 1107	4.6	4.8	4.4	4.0	5.0	5.0
231	Blade Runner	4.6	4.8	4.4	4.3	6.7	5.0
232	PSG-RNDR	4.6	4.6	4.6	3.0	6.3	6.0
233	PST-5GZ6 Bulk	4.6	4.9	4.3	2.3	7.0	4.0
234	Signia	4.6	4.8	4.4	2.7	6.3	4.3
235	51L4	4.6	4.7	4.4	4.3	4.7	5.7
236	Dakota	4.6	4.6	4.5	2.3	7.3	5.0
237	Magellan	4.6	4.8	4.4	5.7	5.3	5.7
238	Silverado II	4.6	4.5	4.7	4.3	5.7	6.3
239	MVS-1107	4.6	4.5	4.6	3.3	4.3	5.3
240	STR Reg QRD	4.6	4.8	4.3	3.0	6.3	5.7
241	ATF 1359	4.5	4.9	4.1	4.3	6.0	4.3
242	CM comp	4.5	4.6	4.5	5.0	5.7	5.0
243	Montana	4.5	4.8	4.3	2.3	7.7	5.3
244	PSG 19-r1-06	4.5	4.5	4.5	4.0	7.0	4.3
245	Virtue II	4.5	4.4	4.6	6.3	4.0	5.3
246	CO1 comp	4.5	4.5	4.4	4.7	5.0	4.0
247	Grande II	4.5	4.9	4.0	4.0	5.3	5.3
248	PSG 18-r4-06	4.5	4.5	4.5	4.0	5.3	4.3
249	PSG 19-r6-06	4.5	4.3	4.6	3.3	7.0	4.7
250	Rebel Pro	4.5	4.5	4.4	4.3	5.7	5.7

(Continued)

Table 3 (continued).

	Cultivar or Selection	-----Turf Quality <sup>1</sup> -----			Spring Green-up <sup>2</sup> 2007 Avg.	Color <sup>3</sup> 2007 Avg.	Brown Patch <sup>4</sup> Aug. 2007
		2007- 2008 Avg.	2007 Avg.	2008 Avg.			
251	Biltmore	4.5	4.6	4.3	3.0	5.0	6.3
252	PSG 13-AB-06	4.5	4.4	4.5	3.3	5.7	5.0
253	PSG 18 bulk-06	4.4	4.5	4.3	3.0	6.3	5.3
254	PSG 20-r3-06	4.4	4.6	4.2	2.3	6.3	4.3
255	Rembrandt	4.4	4.3	4.6	6.0	3.7	5.3
256	5SIS	4.4	4.2	4.6	4.0	3.3	6.3
257	PST-R5B4 Bulk	4.4	4.5	4.3	4.3	3.3	6.7
258	PSG 20-r2-06	4.4	4.4	4.4	2.7	6.0	5.0
259	06-WALK	4.4	4.6	4.1	4.3	7.3	4.3
260	Regiment II	4.4	4.7	4.0	3.0	7.3	4.7
261	Rebel Sentry	4.3	4.6	4.0	3.7	3.7	5.7
262	ATF 1337	4.3	4.4	4.2	1.7	4.3	5.3
263	STR 86 QRD	4.3	4.5	4.1	3.3	6.0	5.0
264	ATF 1340	4.3	4.4	4.1	2.3	6.7	5.7
265	PSG 18-r3-06	4.3	4.1	4.4	3.7	5.3	5.0
266	PSG 20-r1-06	4.3	4.3	4.3	3.0	5.0	3.3
267	AMF-107	4.3	4.2	4.3	8.3	5.0	4.0
268	Trooper	4.3	4.5	4.0	5.3	6.0	4.0
269	Greenkeeper	4.3	4.3	4.2	4.0	5.3	5.7
270	Aristotle	4.2	4.3	4.1	4.3	5.7	5.3
271	GO-1BFD	4.2	4.1	4.3	6.3	4.0	5.0
272	5GH4	4.2	4.3	4.1	2.7	5.7	4.7
273	Lindbergh	4.2	4.2	4.2	5.0	5.7	6.3
274	PSG 18-15-06	4.2	4.4	4.0	2.7	3.7	4.3
275	Constitution	4.2	4.4	4.0	4.0	4.7	6.7

(Continued)

Table 3 (continued).

Cultivar or Selection	-----Turf Quality <sup>1</sup> -----			Spring Green-up <sup>2</sup>	Color <sup>3</sup>	Brown Patch <sup>4</sup>
	2007-2008 Avg.	2007 Avg.	2008 Avg.	2007 Avg.	2007 Avg.	Aug. 2007
276 PST-5MTV Bulk	4.2	4.3	4.0	2.7	6.3	5.7
277 Plato	4.2	4.4	3.9	5.0	4.3	4.3
278 PSG 19-r7-06	4.2	4.2	4.1	2.3	7.0	4.7
279 PSG 10-A-06	4.2	4.1	4.2	2.0	4.7	5.0
280 Watchdog	4.1	4.1	4.1	3.3	2.7	5.3
281 PSG 18-r6-06	4.1	4.2	4.0	2.7	6.0	5.3
282 STR TUQRD	4.1	3.9	4.2	3.3	4.3	5.7
283 Tar Heel II	4.1	4.1	4.0	3.3	4.3	4.7
284 PSG 18-r2-06	4.0	3.8	4.2	3.3	4.7	4.7
285 PSG 20-r1-06	4.0	4.0	4.0	3.0	4.3	4.3
286 ATF 1350	4.0	4.0	4.0	7.7	2.7	5.3
287 Greystone	4.0	3.9	4.0	3.7	4.7	4.7
288 Five Point	3.9	3.7	4.1	3.0	6.0	4.7
289 PSG-TTST	3.9	4.1	3.6	4.3	2.7	4.3
290 Tulsa II	3.5	3.7	3.3	3.7	3.3	4.0
291 Titan Ltd	3.3	3.4	3.1	2.3	3.3	4.3
292 Silverado	3.2	3.3	3.1	4.3	3.0	4.7
293 Paraiso	3.1	3.4	2.9	6.7	1.7	4.3
294 Ky-31	1.1	1.2	1.0	6.7	1.0	5.0
LSD at 5% =	0.6	0.7	0.6	1.8	1.9	1.9

<sup>1</sup>9 = best turf quality<sup>2</sup>9 = earliest spring green-up<sup>3</sup>9 = darkest genetic color<sup>4</sup>9 = least disease

Table 4. Performance of tall fescue cultivars and selections in a turf trial seeded in September 2007 at Adelphia, NJ.

Cultivar or Selection	Turf Quality <sup>1</sup> 2007 Avg.	Brown Patch <sup>2</sup> 2007 Avg.
1 LW Comp	6.7	7.3
2 COM Comp	6.4	7.8
3 Fat Cat	6.3	7.0
4 Aggressor	6.3	7.7
5 Faith	6.1	6.8
6 Ampac-138	6.1	7.0
7 BIZM Comp	6.1	7.0
8 Falcon V	6.0	7.5
9 PST-Syn-5A47	6.0	7.2
10 Cochise IV	6.0	6.8
11 MVS-3609	5.9	7.2
12 FCE3 BS	5.9	7.2
13 Spyder LS	5.9	6.8
14 IS-TF 155	5.9	6.3
15 14-07 Bulk	5.9	6.0
16 LC1 Comp	5.9	7.8
17 Rocket	5.9	6.7
18 Falcon IV	5.8	7.7
19 IS-TF 177	5.8	7.5
20 34-07 Bulk	5.8	6.3
21 Wolfpack II	5.7	7.8
22 PST-5BAB	5.7	6.0
23 Mustang 4	5.7	7.7
24 BC3 Comp	5.7	6.3
25 TR1 Comp	5.7	7.5
26 RAD-TF50	5.7	6.8
27 Essential	5.7	7.3
28 ATF-1382	5.7	7.5
29 Ampac-152	5.7	6.5
30 RAD-TF48	5.6	6.2
31 Shenandoah III	5.6	7.2
32 PST-Syn-5AWT	5.6	7.7
33 40-07 Bulk	5.6	6.8
34 Matador GT	5.6	6.0
35 BC2 Comp	5.6	7.3

(Continued)

Table 4 (continued).

Cultivar or Selection	Turf Quality <sup>1</sup> 2007 Avg.	Brown Patch <sup>2</sup> 2007 Avg.
36 TR2 Comp	5.5	7.2
37 RAD-TF52	5.5	7.0
38 BIZE Comp	5.5	7.3
39 38-07 R-5	5.5	6.5
40 TR3 Comp	5.5	7.2
41 IS-TF 178	5.5	7.2
42 38-07 R-4	5.5	6.8
43 STR 8DDOR	5.5	6.7
44 RAD-TF24R	5.5	7.2
45 IS-TF 175	5.5	7.7
46 Dynamic II	5.5	6.5
47 BBM	5.5	6.7
48 IS-TF 160	5.4	7.0
49 GG2 Comp	5.4	7.2
50 41-07 Bulk	5.4	7.0
51 RAD-TF49	5.4	6.0
52 IS-TF 179	5.4	7.3
53 DDM QRH	5.4	6.5
54 BC1 Comp	5.4	6.3
55 Inferno	5.4	6.7
56 Finelawn Xpress	5.4	7.0
57 CE-4	5.4	6.0
58 Shenandoah Sport	5.3	6.8
59 RAD-TF47	5.3	7.0
60 RAD-TF46	5.3	7.2
61 GG3 Comp	5.3	7.2
62 ATF 1334	5.3	6.2
63 ATF 1301	5.3	6.2
64 AA3R16-5	5.3	6.7
65 5LIV BS	5.3	6.3
66 Stonewall	5.3	6.7
67 RAD-TF44	5.3	6.0
68 STR 86QRH	5.2	5.3
69 RNP	5.2	5.7
70 Hemi	5.2	6.8

(Continued)

Table 4 (continued).

Cultivar or Selection	Turf Quality <sup>1</sup> 2007 Avg.	Brown Patch <sup>2</sup> 2007 Avg.
71 Gazelle II	5.2	5.7
72 SRO 8BB5	5.2	6.0
73 RAD-TF51	5.2	7.3
74 RAD-TF16	5.2	6.3
75 PST-Syn-5SLE	5.2	6.8
76 AA3A4POL	5.2	6.2
77 A4 Comb	5.2	5.5
78 SRO 85 QRV	5.2	7.5
79 RAD-TF31	5.2	7.2
80 Blade Runner	5.2	6.7
81 38-07 R-8	5.2	5.7
82 SRO GRQR	5.1	6.5
83 Six Point	5.1	6.7
84 Shenandoah Elite	5.1	7.5
85 Guardian 21	5.1	6.5
86 BIZL Comp	5.1	7.7
87 ATF-1294	5.1	6.7
88 ATE	5.1	7.7
89 5JAG	5.1	7.2
90 38-07 R-2	5.1	6.5
91 35-07 Bulk	5.1	6.8
92 ATF-1373	5.1	6.8
93 ATF 1236	5.1	6.8
94 38-07 Bulk	5.1	5.7
95 Jaguar 4G	5.1	5.7
96 5BGR	5.1	6.7
97 38-07 R-11	5.1	6.7
98 RAD-TF54	5.0	7.5
99 Innovator	5.0	7.2
100 ATF 1327	5.0	5.8
101 5GH4	5.0	5.7
102 38-07 R-1	5.0	5.7
103 RAD-TF55	5.0	6.0
104 ATF-1383	5.0	7.5
105 ATF-1380	5.0	6.0

(Continued)

Table 4 (continued).

Cultivar or Selection	Turf Quality <sup>1</sup> 2007 Avg.	Brown Patch <sup>2</sup> 2007 Avg.
106 Apache III	5.0	5.8
107 PST-Syn-5EW	5.0	7.0
108 PST-Syn-5DKR	5.0	7.7
109 PST-Syn-5JAE	4.9	7.0
110 Grande II	4.9	7.2
111 Falcon NG	4.9	7.2
112 Blackwatch	4.9	6.8
113 38-07 R-7	4.9	6.2
114 SR 8550	4.9	7.0
115 Sitka	4.9	5.2
116 Scorpion II	4.9	6.3
117 IS-TF 180	4.9	6.8
118 38-07 R-9	4.9	5.5
119 38-07 R-6	4.9	6.2
120 RAD-TF32	4.9	6.0
121 ATF-1349	4.9	6.0
122 Rebel Advance	4.9	5.8
123 37-07 Bulk	4.9	5.3
124 RAD-TF45	4.8	6.0
125 Endeavor II	4.8	6.7
126 37-07 R-12	4.8	6.2
127 ATF-1381	4.8	7.0
128 ATF 1199	4.8	6.7
129 PST-Syn-5ZT16	4.7	6.5
130 SRO PSG TTRH	4.7	6.2
131 PST-Syn-5EVA	4.7	6.7
132 Justice	4.7	6.8
133 ATF-1247	4.7	6.2
134 22-07 Bulk	4.7	4.5
135 Fidelity	4.6	6.0
136 Cayenne	4.6	6.2
137 AR7 Comp	4.6	6.8
138 AA2R25-7	4.6	6.5
139 SR 8600	4.6	5.8
140 STR TitOR	4.6	5.2

(Continued)

Table 4 (continued).

Cultivar or Selection	Turf Quality <sup>1</sup> 2007 Avg.	Brown Patch <sup>2</sup> 2007 Avg.
141 CIAZRH	4.6	6.5
142 5DVD-07	4.6	7.2
143 Virtue II	4.5	6.2
144 Turbo	4.5	5.8
145 Empress	4.5	6.3
146 Brockton	4.5	5.0
147 Watchdog	4.5	6.3
148 SRO PSG RNDR	4.5	6.3
149 5SIS	4.5	6.3
150 SRO STR THQR	4.4	6.7
151 Quest	4.4	6.2
152 PST-Syn-5SL5-07	4.4	6.8
153 Tar Heel II	4.3	6.8
154 Silverado II	4.3	6.7
155 Green Keeper	4.3	5.8
156 Endeavor	4.3	6.0
157 Bingo	4.2	6.2
158 Arid 3	4.2	6.8
159 PSG TTST	4.2	6.0
160 Regiment II	4.1	5.8
161 38-07 R-10	4.1	4.8
162 Wolfpack	3.8	6.8
163 Pixie	3.8	6.3
164 Titan Ltd	3.7	5.8
165 Jaguar 3	3.6	6.7
166 Amalia	1.9	6.5
167 5CAN	1.0	5.7
LSD at 5% =	0.7	1.1

<sup>1</sup>9 = best turf quality<sup>2</sup>9 = least disease



Table 5. Yearly nitrogen (N) applied and mowing height (Ht) on tall fescue tests established at Adelphia, NJ.

	2005		2006		2007	
	N <sup>1</sup>	Ht <sup>2</sup>	N	Ht	N	Ht
Table 1 (2005).....	4.3	1.5	2.3	1.5	3.3	1.5
Table 2 (2005 CTBT).....	4.3	1.5	3.5	1.5	2.8	1.5
Table 3 (2006).....			3.5	1.5	4.0	1.5
Table 4 (2007).....					3.5	1.5

<sup>1</sup> Annual N applied (lb/1000 ft<sup>2</sup>)

<sup>2</sup> Mowing height in inches



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