

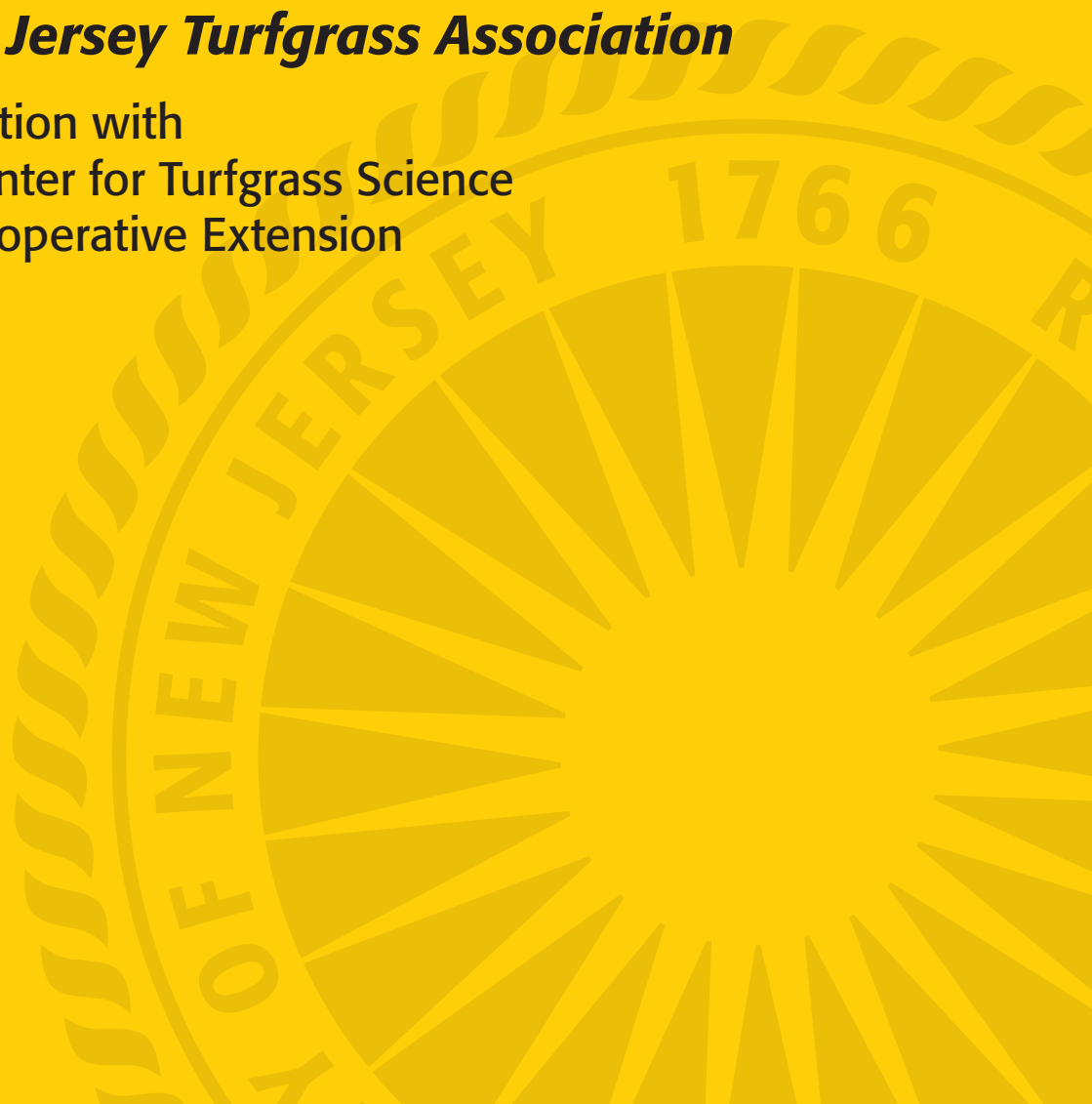
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The Rutgers Turfgrass Proceedings is published yearly by the Rutgers Center for Turfgrass Science, Rutgers Cooperative Extension, and the New Jersey Agricultural Experiment Station, School of Environmental and Biological Sciences, Rutgers, The State 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 2014 GREEN EXPO Turf and Landscape Conference. 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 TALL FESCUE CULTIVARS AND SELECTIONS IN NEW JERSEY TURF TRIALS

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Tall fescue [*Lolium arundinacea* (Schreb.) Darbyshire], a cool season grass that is native to Europe and some parts of Africa (Buckner et al., 1979), was introduced to the United States in the 1800s as a forage grass (Hoveland, 2009). Tall fescue gained popularity after the release of the first commercial cultivar 'KY-31' in 1940, which enhanced forage production in United States. The utility of tall fescue extended to turfgrass after the release of the first turf type tall fescue cultivar 'Rebel' in 1979 (Funk et al., 1981). Since that time, tall fescue has become one of the major cool season turf species used in the United States because of its winter hardiness, persistence, adaptability to a wider range of soils, and tolerance to shade and drought. Tall fescue has a deep root system that enhances drought tolerance and allows the plant to stay green longer in dry conditions. Tall fescue also has among the best heat tolerance of the cool-season grasses. These qualities have increased the use of tall fescue in home lawns, sports fields, golf course roughs, recreational fields, sod farms, and roadsides.

The Rutgers tall fescue breeding program has focused on turf quality (darker leaf color, lower growth habit, finer leaf texture, and denser turf canopy) and the presence of endophytes that convey resistance to insects that feed above ground. Endophytic fungi live symbiotically inside the stem and leaf tissues (intercellular areas) and produce alkaloids that enhance tolerance to above ground insect feeding (Funk et al., 1993). The incorporation of endophytic fungi in tall fescue has been a major breeding objective for many years.

One of the major limitations of tall fescue is its susceptibility to brown patch, a disease caused by

the fungus *Rhizoctonia solani*, in warm and humid regions. Brown patch, a soilborne disease of both cool season and warm season turfgrasses, causes blighted, circular to irregularly-shaped patches to form in the turf which quickly fade to light brown. Breeding for disease resistance is one of the main objectives of the Rutgers breeding program. The demand for disease resistant cultivars, with concurrent higher turf quality and superior performance, is high among consumers.

The Rutgers turfgrass breeding program has continued to develop improved tall fescue cultivars. At present, thousands of germplasm sources have gone through numerous cycles of selection and hybridization to improve turf quality, disease resistance, billbug resistance, and wear and drought tolerance. To achieve these objectives, collected germplasm has also been incorporated in the breeding program to introduce beneficial genes into the populations.

PROCEDURES

Field Establishment and Maintenance

Six tall fescue trials were established at the Rutgers Plant Biology and Pathology Research and Extension Farm at Adelphia, NJ between 2011 and 2013 (Tables 1 to 6). All tests were established in September by hand sowing 1.41 oz of seed per 3 x 5 ft plot (5.9 lb per 1000 ft²), excluding the 2012 NTEP test (Table 3) which was sown at the rate of 2.29 oz of seed per 4 x 6 ft plot (5.9 lb per 1000 ft²). All tests were arranged in randomized complete block design with three replications, and each plot had a 6-inch unseeded border to limit contamination.

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Broadleaf weeds were controlled with spring or fall applications of 2,4-D, dicamba (Banvel), and MCPP. Dithiopyr (Dimension) was applied in spring to control annual grassy weeds. In July, metalaxyl (Subdue) was applied when required to prevent Pythium blight disease. Single applications of fertilizer did not exceed 1.0 lb nitrogen (N) per 1000 ft². The amount and timing of N applied to the turf varied to encourage disease and other stresses (Table 7). The trials established in 2013 received an application of 10-10-10 fertilizer at the rate of 1.0 lb per 1000 ft² at establishment. Field trials were mowed regularly (approximately 1 to 2 times per week) with rotary mowers to maintain a 1.5-inch height of cut. The annual rate of N applied as well as mowing height for each test is presented in Table 7. 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. The 2013 A-LIST (Table 4) and 2013 low maintenance (Table 5) tests were managed under a low maintenance regimen which consisted of a higher mowing height (2.5 inches) as well as reduced nitrogen inputs (1.0 lb per 1000 ft²) for the year (Table 7).

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 vertical growth rate, leaf texture, and damage due to insects and diseases). Other ratings such as spring green-up, 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 results. 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.

RESULTS AND DISCUSSION

Results of tall fescue tests are found in Tables 1 through 6. The 2011 and 2012 tests (Tables 1 to 3) are ranked by overall (multi-year) turf quality average; the 2013 tests (Tables 4 to 6) are ranked by turf quality in 2013. 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

Higher turf quality increases the utility of tall fescue in athletic fields, school grounds, sod farms, lawns, and parks. Turf quality characteristics include canopy density, uniformity, lower growth habit, finer leaf texture, dark green color, and tolerance to disease or environmental stress.

The selections and cultivars with the highest quality ratings in the 2011 (Table 1) were PPG-TF 141, B23, Firecracker SLS, and PPG-TF 140. Those with the lowest quality ratings were Grande, PSG 8RSTR3, and Teton. In the 2012 test (Table 2), the highest quality selections and cultivars were Regenerate, W43, and 4th Millennium; Jaguar 4G, Tar Heel II, and Arid 3 had the lowest quality ratings. In the 2012 NTEP test (Table 3), entries rated most highly included Regenerate, PPG-TF-152, 4th Millennium SRP, Traverse 2, IS-TF 269 SEL, PPG-TF-170, and Firecracker SLS, while those that rated most poorly were BAR Fa 121091, BAR Fa 120878, and Ky-31. In the 2013 A-LIST test (Table 4), the highest quality selections and cultivars were Titanium 2LS, DLF 3279, Screamer LS, and DLF 3431, and the lowest quality entries were Van Gogh, Bladerunner 2, Picasso, and Guardian 41. In the 2013 low maintenance test (Table 5), the highest quality selections and cultivars were PPG-TF 190, PPG-TF 180, TA2 Comp, and PPG-TF 198; those rated poorly included 3T1 Comp, 3T3 Comp, and 3T2 Comp. Finally, in the 2013 test (Table 6) the highest performing selections and cultivars were Raptor III, 305 Comp, Firewall, and TMT Comp, whereas the poorest performers included Masterpiece, 6-5-09TF, Scorpion II, and AGRFA-190.

Leaf Texture

Turfgrass texture is a rating based on estimated leaf width. The rating is based on a 1 to 9 scale where 1 = coarse texture and 9 = fine texture. The 2012 NTEP trial (Table 3) was rated for leaf texture, and the selections with the finest texture were RAD-TF-88, RAD-TF-92, RAD-TF-89, and MET 1, while the most coarse textured selections and cultivars were PST-5EX2, BAR Fa 120878, and Ky-31.

Color

The 2012 NTEP test was also rated for color in October of 2014 (Table 3). The rating for color is

based on a 1 to 9 scale where 1 = light green and 9 = dark green. The darkest selections and cultivars for that test were OR-21, IS-TF 330, IS-TF 282 M2, IS-TF 284 M2, IS-TF 289, IS-TF 307 SEL, TY 10, IS-TF 272, and Exp TF-09, while the lightest colored selections and cultivars were PST-5EX2 and Ky-31.

Disease Resistance

Brown patch, a major disease of tall fescue, causes significant damage during humid and warm weather conditions. Improved cultivars are available but there are no cultivars that are completely resistant to this disease. In the 2012 NTEP test (Table 3), the selections and cultivars with the greatest resistance to brown patch were IS-TF 308 SEL, Regenerate, Reflection, MET-3, and Cochise V, while Ky-31, Dynamite LS, Catalyst, and Rhambler 2 SRP were more susceptible. In the 2013 test (Table 6), the more resistant entries were W43, Rowdy, and Titanium 2LS, whereas AGRFA-190, Summer, Titan Ultra, and 6-5-09TF were the least resistant.

Establishment

Improved establishment of tall fescue after seed sowing makes a sward denser and reduces soil erosion. Cultivars with improved establishment are in demand by turfgrass managers, sod growers, and consumers. Rapid establishment is an objective for turf breeders to improve germination and tillering rates. The cultivars and selections that established most rapidly in the 2013 test (Table 6) were 3rd Millennium, AGRFA-190, Monet, Bladerunner 2, and Sequester. Those that were the slowest to establish included Guardian 41 and SR 8650. In the 2013 low maintenance test (Table 5), the most rapidly established selections and cultivars were PPG-TF 198, PPG-TF 195, and 3T1 Comp, whereas Titanium 2LS, Bizem, PPG-TF 178, PPG-TF 153, PPG-TF 177, and PPG-TF 154 established more slowly. In the 2013 A-LIST test (Table 4), the selections and cultivars that exhibited rapid establishment were Spyder LS and Firecracker SLS, whereas Guardian 41 was the slowest to establish.

SUMMARY

At Rutgers, turfgrass breeders are continuing to make progress in improving tall fescue to extend its acceptance in the turfgrass industry and among consumers. Resistance to brown patch, rapid establishment, and higher turf quality are among the

primary goals of tall fescue breeding programs. Ongoing evaluation of cultivars and germplasm helps to identify superior lines that can be used by breeders to develop new cultivars. Efforts to collect germplasm and incorporate endophytes in tall fescue may lead to increased persistence and tolerance to above ground insect feeding and diseases. Therefore, the efforts to improve tall fescue would extend its utility to the areas where it has not been used before and would be suitable to different regions in United States.

ACKNOWLEDGMENTS

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Table 1. Performance of tall fescue cultivars and selections in a turf trial established in September 2011 at Adelphia, NJ.

	Cultivar or Selection	-----Turf Quality ¹ -----			
		2012-2014 Avg.	2012 Avg.	2013 Avg.	2014 Avg.
1	PPG-TF 141	6.3	7.1	6.5	5.2
2	B23	6.2	6.8	6.6	5.1
3	Firecracker SLS	6.1	6.7	6.4	5.1
4	PPG-TF 140	6.1	6.5	6.1	5.5
5	Rowdy	6.0	6.3	6.3	5.5
6	PST-Syn-R5D0	6.0	6.4	6.1	5.4
7	Falcon V	5.9	6.8	6.1	4.9
8	Xtender	5.9	6.6	6.1	5.1
9	Rhambler 2 SRP	5.9	6.1	6.0	5.5
10	U41 COMP	5.8	6.8	6.2	4.6
11	PPG-TF 121	5.8	6.4	6.2	4.9
12	MET3 COMP	5.8	6.4	6.0	5.0
13	PPG-TF 123	5.8	6.2	6.1	5.1
14	PPG-TF 138	5.8	6.6	5.9	4.8
15	U44 COMP	5.8	6.8	6.0	4.5
16	WE2 COMP	5.8	6.5	6.0	4.8
17	Regenerate	5.7	6.5	5.9	4.8
18	Reflection	5.7	6.7	5.7	4.8
19	Firewall	5.7	6.7	5.7	4.7
20	PPG-TF 106	5.7	6.3	6.2	4.7
21	PPG-TF 144	5.7	6.2	6.1	4.8
22	ATF 1734	5.7	5.9	5.9	5.2
23	ATF 1738	5.7	5.8	6.0	5.1
24	Hot Rod	5.7	6.2	6.1	4.7
25	MET6 COMP	5.6	6.1	5.9	4.9
26	PST-Syn-50NC	5.6	6.0	5.6	5.3
27	PPG-TF 143	5.6	6.4	5.8	4.7
28	Raptor III Comp	5.6	6.2	5.9	4.7
29	GTO	5.6	6.3	5.9	4.7
30	ATF 1732	5.6	5.7	5.7	5.4
31	MET4 COMP	5.6	6.5	5.8	4.4
32	W45 COMP	5.5	6.5	5.7	4.4
33	SC-1	5.5	6.5	5.6	4.5
34	MET1 COMP	5.5	6.1	5.7	4.8
35	PPG-TF 116	5.5	6.4	5.5	4.7

(Continued)

Table 1. Tall fescue turf trial, 2011 (continued).

	Cultivar or Selection	-----Turf Quality ¹ -----			
		2012-2014 Avg.	2012 Avg.	2013 Avg.	2014 Avg.
36	Penn RK4	5.5	6.6	5.6	4.3
37	PST-5AWT-08	5.5	6.4	5.4	4.8
38	CCR2 COMP	5.5	6.6	5.4	4.4
39	W43 COMP	5.5	6.8	5.5	4.1
40	PST-5MVD	5.5	5.7	5.4	5.3
41	3611 R6	5.4	6.1	5.4	4.8
42	Ares	5.4	6.7	5.4	4.1
43	2-11 TF PC	5.4	6.1	5.5	4.7
44	ATF 1739	5.4	5.7	5.6	5.0
45	PST-Syn-5END	5.4	5.5	5.8	4.9
46	RZ2 COMP	5.4	6.3	5.8	4.1
47	Spyder	5.4	6.1	5.5	4.6
48	ATF 1736	5.4	5.9	5.5	4.7
49	ATF 1740	5.4	6.2	5.5	4.5
50	PST-5MCD	5.4	6.2	5.2	4.6
51	PPG-TF 122	5.3	5.8	5.3	4.9
52	ATF 1735	5.3	5.7	5.6	4.7
53	4th Millennium	5.3	6.3	5.5	4.2
54	Firecracker LS	5.3	6.3	5.2	4.5
55	Dynamite LS	5.3	6.6	5.0	4.3
56	ATF-1521	5.3	6.2	5.4	4.3
57	ATF 1703	5.3	6.1	5.5	4.3
58	Golconda	5.3	6.2	5.4	4.3
59	3611 R2	5.3	6.3	5.2	4.4
60	PST-Syn-5MBP	5.3	5.7	5.6	4.5
61	PST-5BRK	5.3	5.4	5.6	4.7
62	Shenandoah Elite	5.3	6.3	5.4	4.0
63	ATF 1702	5.2	5.8	5.4	4.5
64	RZ1 COMP	5.2	5.9	5.4	4.3
65	PST-Syn-5MINI	5.2	5.2	5.6	4.9
66	6011 Bulk	5.2	5.7	5.3	4.7
67	5911 R3	5.2	5.5	5.7	4.4
68	Shenandoah III	5.2	6.2	5.3	4.1
69	ATF 1731	5.2	5.6	5.1	4.8
70	Dorado	5.2	6.1	5.3	4.2

(Continued)

Table 1. Tall fescue turf trial, 2011 (continued).

	Cultivar or Selection	-----Turf Quality ¹ -----			
		2012-2014 Avg.	2012 Avg.	2013 Avg.	2014 Avg.
71	Gazelle II	5.2	5.6	5.4	4.6
72	ATF 1706	5.2	5.6	5.4	4.5
73	Meridian	5.2	5.6	5.1	4.8
74	PSG 8SP2	5.2	6.0	5.1	4.4
75	ATF-1257	5.2	5.9	5.0	4.5
76	IS-IF-154	5.2	5.7	5.4	4.3
77	ATF 1701	5.1	5.8	5.4	4.2
78	PSM-6351	5.1	5.6	5.2	4.5
79	ATF 1704	5.1	5.4	5.3	4.6
80	PST-Syn-R5HH	5.1	5.3	5.5	4.5
81	Mustang 4	5.1	5.7	5.6	4.0
82	5911 R11	5.1	5.8	4.9	4.5
83	Rebel IV	5.1	5.6	5.0	4.5
84	ATF 1737	5.1	5.6	5.3	4.2
85	PST-5FDR	5.1	6.1	5.1	4.0
86	3611 R5	5.1	5.9	5.2	4.1
87	6011 R1	5.1	5.8	5.1	4.2
88	PPG-TF 115	5.0	5.6	5.1	4.5
89	5911 R10	5.0	5.9	5.1	4.1
90	PSG 6008	5.0	5.7	5.3	4.1
91	5911 R4	5.0	5.3	5.1	4.7
92	Finelawn Express	5.0	6.0	5.0	4.1
93	5911 R7	5.0	5.2	5.6	4.3
94	ATF 1705	5.0	5.5	5.2	4.4
95	ATF 1729	5.0	5.4	5.3	4.4
96	Dynamic II	5.0	5.5	5.1	4.5
97	PST-5A4S	5.0	6.2	5.1	3.8
98	Grande 3	5.0	6.2	4.7	4.1
99	Van Gogh	5.0	5.9	5.0	4.1
100	PST-5SDS	5.0	5.1	5.1	4.8
101	ATF 1707	5.0	5.9	4.9	4.2
102	PPG-TF 102	5.0	6.1	5.0	3.9
103	3611 Bulk	5.0	5.5	5.1	4.4
104	5911 R13	5.0	5.7	5.0	4.3
105	PST-Syn-5C20	5.0	4.9	5.1	4.9

(Continued)

Table 1. Tall fescue turf trial, 2011 (continued).

	Cultivar or Selection	-----Turf Quality ¹ -----			
		2012-2014 Avg.	2012 Avg.	2013 Avg.	2014 Avg.
106	Crossfire 3	5.0	5.7	4.9	4.4
107	3611 R4	5.0	5.7	4.8	4.5
108	3611 R3	5.0	5.8	4.8	4.3
109	Fesnova	5.0	6.0	5.0	3.9
110	5911 R8	5.0	5.6	5.2	4.0
111	5911 R5	5.0	5.7	5.0	4.2
112	6011 R6	5.0	5.6	5.0	4.3
113	Rebel Xtreme	4.9	6.0	5.1	3.7
114	PSG 8TST4	4.9	5.2	5.2	4.4
115	Monet	4.9	5.4	5.2	4.1
116	OST-Syn-5E11	4.9	5.4	4.9	4.5
117	PSG TF 08-6	4.9	5.6	5.2	4.0
118	Rhambler SRP	4.9	5.5	5.0	4.2
119	PST-5R05	4.9	5.7	5.0	4.0
120	PST-5SXD	4.9	5.5	5.2	4.0
121	PST-Syn-5COY	4.9	4.8	5.2	4.7
122	Cumberland	4.9	5.0	5.2	4.5
123	PST-5SXR	4.9	6.1	4.8	3.7
124	ATF 1728	4.9	5.2	5.0	4.3
125	PST-5DRP	4.9	5.2	5.1	4.2
126	PSG 8BP2	4.9	5.8	4.8	3.9
127	Tulsa Time	4.9	5.5	4.9	4.1
128	3311 R4	4.9	5.1	4.9	4.6
129	Justice	4.8	5.3	5.1	4.2
130	ATF 1733	4.8	5.4	4.9	4.2
131	5911 Bulk	4.8	5.3	4.9	4.4
132	3611 R1	4.8	5.6	4.9	4.0
133	6011 R4	4.8	5.2	4.8	4.5
134	PST-Syn-525D	4.8	5.1	5.3	4.1
135	Duration	4.8	5.3	4.9	4.2
136	PST-Syn-5NGE	4.8	5.7	4.9	3.9
137	FCE 3	4.8	5.8	4.6	4.0
138	PPG-TF 101	4.8	5.4	5.0	4.0
139	3-11 TF PC	4.8	5.3	4.9	4.1
140	Speedway	4.8	5.1	4.9	4.2

(Continued)

Table 1. Tall fescue turf trial, 2011 (continued).

	Cultivar or Selection	-----Turf Quality ¹ -----			
		2012-2014 Avg.	2012 Avg.	2013 Avg.	2014 Avg.
141	WDA23 COMP	4.8	5.3	5.1	3.9
142	Tonto	4.8	5.4	5.0	3.8
143	6011 R7	4.8	5.5	4.9	3.9
144	6011 R3	4.8	5.6	4.7	4.0
145	Titanium LS	4.8	4.9	4.9	4.4
146	Rebel Exeda	4.7	5.4	5.1	3.7
147	ATF 1709	4.7	5.1	4.8	4.3
148	SR 8650	4.7	5.4	4.8	4.1
149	Rebel Advance	4.7	5.5	4.8	3.9
150	STR 86GRH	4.7	5.2	4.7	4.3
151	PSG 8GF7	4.7	5.5	4.6	4.1
152	MNTF-DW-11	4.7	5.9	4.8	3.5
153	PSG 85QR	4.7	5.2	4.6	4.2
154	ATF-1255	4.7	5.3	4.9	3.9
155	Leonardo	4.7	5.2	5.0	3.8
156	Guardian 41	4.7	5.0	4.9	4.1
157	PST-5DVD	4.7	5.2	4.8	4.1
158	SR 8550	4.7	5.6	4.3	4.1
159	3311 R6	4.7	5.1	4.6	4.3
160	Shenandoah Sport	4.7	5.2	4.6	4.2
161	Inferno	4.6	5.3	4.6	4.0
162	Rebel XLR	4.6	4.9	5.0	4.1
163	Rain Dance	4.6	5.3	4.6	4.0
164	ATF-1533	4.6	5.5	4.7	3.7
165	PST-Syn-5EXT	4.6	4.7	4.4	4.8
166	PSG 8GF8	4.6	5.3	4.7	3.9
167	GSD	4.6	5.4	4.8	3.6
168	3311 Bulk	4.6	5.0	4.6	4.2
169	PSG 85P1	4.6	5.1	4.6	4.1
170	PSG 8NJMD	4.6	5.2	4.7	3.9
171	Six Point	4.6	4.9	4.8	4.1
172	ATF 1708	4.6	5.1	4.9	3.7
173	PST-Syn-5FAW	4.6	4.9	4.7	4.1
174	3311 R10	4.6	5.0	5.0	3.8
175	ATF-1252	4.6	4.9	4.8	4.0

(Continued)

Table 1. Tall fescue turf trial, 2011 (continued).

	Cultivar or Selection	-----Turf Quality ¹ -----			
		2012-2014 Avg.	2012 Avg.	2013 Avg.	2014 Avg.
176	9-11 TF PC	4.6	5.0	4.6	4.1
177	Renegade Supreme	4.6	5.1	4.7	3.9
178	Terrano	4.5	5.1	4.6	3.9
179	STR 8GRQR	4.5	5.4	4.2	4.0
180	3311 R5	4.5	4.9	4.6	4.0
181	3311 R8	4.5	5.4	4.5	3.7
182	PST-5BGR	4.5	4.9	4.7	4.0
183	Bearcat	4.5	5.0	4.5	4.1
184	PSG 8GF3	4.5	4.7	4.7	4.1
185	STR 86QR	4.5	5.0	4.6	4.0
186	PSG 8TTS1OW	4.5	4.8	4.5	4.2
187	PSG 8SP1	4.5	5.2	4.5	3.8
188	PSG 8GF5	4.5	4.7	4.6	4.1
189	3311 R10	4.5	5.1	4.6	3.7
190	Tarnation GT	4.4	5.0	4.6	3.7
191	PST-R5W3	4.4	4.7	4.9	3.7
192	PST-5LIV	4.4	5.2	4.3	3.9
193	JT-158	4.4	5.3	4.1	3.9
194	Lexington	4.4	5.0	4.7	3.5
195	Blackwatch 2	4.4	4.8	4.6	3.8
196	Greystone II	4.4	4.9	4.7	3.6
197	PST-5YMY	4.4	4.2	4.5	4.4
198	PSG 8G1643	4.4	4.9	4.3	3.9
199	Faith	4.4	4.9	4.5	3.7
200	Inspiration	4.4	4.9	4.3	3.8
201	Virtue II	4.3	4.7	4.4	3.9
202	ATF 1730	4.3	4.7	4.3	4.0
203	Endeavor II	4.3	4.9	4.4	3.7
204	PSG 8NJMT	4.3	4.8	4.3	3.9
205	WDA1 COMP	4.3	4.9	4.3	3.7
206	PST-Syn-5NCW	4.3	4.4	4.2	4.3
207	PSG 8GF4	4.3	4.8	4.3	3.8
208	PSG RNDR	4.3	5.0	4.4	3.5
209	Cezanne RZ	4.3	5.0	4.3	3.5
210	Grande II	4.3	4.8	4.1	3.9

(Continued)

Table 1. Tall fescue turf trial, 2011 (continued).

	Cultivar or Selection	-----Turf Quality ¹ -----			
		2012-2014 Avg.	2012 Avg.	2013 Avg.	2014 Avg.
211	Brockton	4.3	4.9	4.2	3.6
212	PST-5SIS	4.2	4.6	4.4	3.8
213	PST-5YA	4.2	4.0	4.8	3.9
214	Crewcut II	4.2	4.4	4.5	3.8
215	Scorpion II	4.2	4.6	4.2	3.8
216	Regiment II	4.2	5.0	4.1	3.4
217	3311 R2	4.2	4.7	4.3	3.6
218	PSG 8GF2	4.2	4.6	4.1	3.8
219	PSG 8GF6	4.1	4.7	4.1	3.6
220	Guardian	4.1	4.5	4.2	3.6
221	Arid 3	4.1	4.3	4.2	3.7
222	Tar Heel II	4.1	4.6	4.0	3.8
223	Jaguar 4G	4.1	4.5	4.1	3.7
224	Prospect	4.1	4.9	3.9	3.5
225	Davinci	4.1	4.6	4.3	3.3
226	Rembrandt	4.1	4.8	4.0	3.4
227	Montana	4.1	4.6	4.2	3.4
228	PSG 8GF1	4.1	4.4	4.1	3.7
229	Masterpiece	4.1	4.5	4.2	3.5
230	PSG 8GRTJ	4.1	4.5	4.0	3.7
231	Quest	4.0	4.5	3.9	3.6
232	Greystone	4.0	4.5	4.1	3.4
233	PSG TTST	4.0	4.5	4.0	3.5
234	Cayenn+D500e	4.0	4.7	3.8	3.5
235	PST-Syn-5W1	4.0	4.1	4.2	3.6
236	PSG TTRH	3.9	4.4	3.8	3.6
237	Greenkeeper	3.9	4.4	4.2	3.2
238	Coronado THD	3.8	4.1	4.0	3.4
239	Picasso	3.8	4.4	4.1	3.0
240	Watchdog	3.4	3.4	3.5	3.3
241	Grande	2.8	2.8	2.6	3.0
242	PSG 8RSTR3	1.8	1.9	1.8	1.7
243	Teton	1.6	1.6	1.5	1.6
	LSD at 5% =	0.6	0.8	0.8	0.8

¹9 = best turf quality

Table 2. Performance of tall fescue cultivars and selections in a turf trial established in September 2012 at Adelphia, NJ.

Cultivar or Selection	-----Turf Quality ¹ -----		
	2013-2014 Avg.	2013 Avg.	2014 Avg.
1 Regenerate	6.7	6.9	6.6
2 W43	6.5	7.0	6.0
3 4th Mellennium	6.4	6.5	6.2
4 U41	6.3	6.5	6.2
5 B23	6.3	6.8	5.8
6 Traverse 2	6.2	6.4	6.0
7 YA2	6.0	6.2	5.8
8 Raptor III	6.0	6.4	5.7
9 Avenger II	6.0	6.1	6.0
10 PPG-TF 170	6.0	6.0	5.9
11 PSG 07-9TF	5.9	6.5	5.4
12 MET1	5.9	6.0	5.8
13 Hot Rod	5.9	5.9	5.8
14 Rhambler 2 SPR	5.8	6.3	5.2
15 PPG-TF 116	5.7	6.2	5.3
16 PPG-TF 106	5.7	6.2	5.2
17 Titanium 2LS	5.7	6.1	5.3
18 LB08-1-12	5.7	6.2	5.2
19 CCR2	5.7	5.7	5.6
20 MET3	5.7	5.9	5.5
21 Leonardo	5.7	5.8	5.5
22 PPG-TF 172	5.7	6.0	5.3
23 Cochise IV	5.6	6.3	4.9
24 PPG-TF 120	5.6	6.0	5.3
25 Toltec	5.6	6.2	5.0
26 Firecracker SLS	5.6	5.8	5.5
27 PPG-TF 151	5.6	6.1	5.1
28 PPG-TF 137	5.6	5.6	5.6
29 PSM-6351	5.6	6.1	5.1
30 PPG-TF 153	5.6	5.7	5.5
31 LB08-4-12	5.6	5.7	5.5
32 PSG 07-05	5.6	6.2	4.9
33 Rowdy	5.6	6.4	4.7
34 W41	5.6	5.6	5.5
35 PPG-TF 169	5.5	5.5	5.6

(Continued)

Table 2. Tall fescue turf trial, 2012 (continued).

Cultivar or Selection	-----Turf Quality ¹ -----		
	2013-2014 Avg.	2013 Avg.	2014 Avg.
36 Fesnova	5.5	6.0	5.0
37 PPG-TF 143	5.5	5.7	5.3
38 PPG-TF 144	5.5	5.9	5.1
39 Black Tail	5.5	5.5	5.5
40 Terrano	5.5	5.9	5.0
41 LB08-9-12	5.4	5.5	5.3
42 PS-Fa-09-7-10	5.4	6.0	4.9
43 LB07-3-11	5.4	6.0	4.9
44 Firebird 2	5.4	5.5	5.4
45 PST-Syn-5A8	5.4	5.4	5.4
46 YA1	5.4	5.6	5.2
47 PPG-TF 140	5.4	5.8	5.0
48 PPG-TF 141	5.4	5.8	5.0
49 PPG-TF 146	5.4	5.6	5.2
50 Bullseye	5.4	5.8	5.0
51 PPG-TF 173	5.4	5.5	5.3
52 LB08-7-12	5.4	5.8	4.9
53 LB08-8-12	5.4	5.3	5.4
54 SR 8650	5.4	5.5	5.2
55 Bizem	5.4	5.5	5.2
56 PSG 6008	5.3	5.9	4.8
57 WDA1	5.3	5.4	5.3
58 PSG 709509	5.3	5.8	4.8
59 PPG-TF 138	5.3	5.8	4.8
60 Ares	5.3	5.6	4.9
61 Screamer LS	5.3	5.3	5.2
62 PPG-TF 154	5.3	5.5	5.1
63 PS-Fa-10-2	5.3	5.5	5.1
64 Xtender	5.3	5.6	5.0
65 LB07-1-11	5.3	5.7	4.8
66 PST-5FDR	5.2	5.6	4.8
67 PS-Fa-09-7-21	5.2	5.8	4.7
68 F711	5.2	5.2	5.2
69 PST-5T20	5.2	5.8	4.5
70 Monet	5.1	5.4	4.8

(Continued)

Table 2. Tall fescue turf trial, 2012 (continued).

Cultivar or Selection	-----Turf Quality ¹ -----		
	2013-2014 Avg.	2013 Avg.	2014 Avg.
71 Hudson	5.1	5.7	4.6
72 LB08-3-12	5.1	5.1	5.1
73 Rebel Xtreme	5.1	5.7	4.5
74 PSG 5908	5.1	5.7	4.5
75 Mustang 4	5.1	5.1	5.1
76 PST-5JUBY	5.1	5.0	5.2
77 STR 86QRH	5.1	5.4	4.7
78 Persuasion	5.0	5.3	4.8
79 LB07-4-11	5.0	5.5	4.6
80 Firecracker LS	5.0	5.0	5.0
81 Dynamic II	5.0	5.6	4.5
82 LB08-6-12	5.0	5.6	4.4
83 LB07-7-11	5.0	5.5	4.6
84 LS 1200	5.0	5.2	4.8
85 PSG 39-05	5.0	5.5	4.5
86 LB08-5-12	5.0	5.5	4.4
87 Darlington	5.0	5.6	4.3
88 Crossfire 3	5.0	5.8	4.1
89 PS-Fa-09-7-11	5.0	5.5	4.4
90 LB08-2-12	5.0	5.3	4.6
91 LB07-5-11	5.0	5.2	4.7
92 Penn RK4	4.9	5.2	4.7
93 Falcon V	4.9	5.0	4.9
94 PPG-TF 117	4.9	5.1	4.8
95 Inferno	4.9	5.4	4.4
96 Talledaga	4.9	5.4	4.4
97 SRX 8BBS	4.9	5.4	4.4
98 Dynamite LS	4.9	5.3	4.5
99 3rd Millennium	4.9	5.4	4.3
100 PPG-TF 125	4.9	4.8	4.9
101 PS-Fa-09-7-23	4.9	5.3	4.4
102 PS-Fa-09-7-Bulk	4.8	5.1	4.5
103 PST-5WAL	4.8	5.0	4.6
104 LB07-2-11	4.8	5.0	4.6
105 PST-5SXD	4.8	5.1	4.4

(Continued)

Table 2. Tall fescue turf trial, 2012 (continued).

Cultivar or Selection	-----Turf Quality ¹ -----		
	2013-2014 Avg.	2013 Avg.	2014 Avg.
106 PPG-TF 115	4.7	5.4	4.1
107 PSG 85QR	4.7	5.5	4.0
108 Shenandoah III	4.7	4.8	4.6
109 8NJMT	4.7	5.0	4.4
110 Corona	4.7	5.2	4.1
111 Rendition RX	4.7	5.0	4.3
112 PST-5W03	4.7	4.7	4.6
113 Gazelle II	4.7	4.9	4.4
114 8NJMD	4.7	5.0	4.3
115 Van Gogh	4.6	4.8	4.5
116 Shenandoah Sport	4.6	5.1	4.2
117 8GR841	4.6	5.1	4.2
118 PS-Fa-09-7-7	4.6	4.9	4.3
119 Cumberland	4.6	4.8	4.3
120 PST-Syn-5WAZ	4.6	4.4	4.7
121 LB07-6-11	4.6	4.8	4.3
122 Speedway	4.5	4.6	4.5
123 Spyder LS	4.5	4.7	4.3
124 Renegade Supreme	4.5	4.9	4.1
125 PS-Fa-09-7-5	4.5	4.7	4.2
126 Covenant II	4.5	4.7	4.2
127 Blackwatch 2	4.5	4.5	4.4
128 PS-Fa-09-7-24	4.5	5.0	3.9
129 PPG-TF 101	4.4	4.9	4.0
130 Duration	4.4	4.7	4.1
131 Falcon IV	4.4	5.0	3.8
132 PST-Syn-5WAB	4.4	4.2	4.6
133 Quest	4.3	4.8	3.9
134 PS-Fa-09-7-1	4.3	4.4	4.2
135 STR 8GRQR	4.3	4.3	4.2
136 Six Point	4.3	4.5	4.0
137 Rain Dance	4.2	4.2	4.2
138 PST-Syn-5MET	4.2	4.0	4.5
139 Rebel XLR	4.2	4.3	4.1
140 PST-Syn-5WIN	4.2	4.2	4.2

(Continued)

Table 2. Tall fescue turf trial, 2012 (continued).

Cultivar or Selection	-----Turf Quality ¹ -----		
	2013-2014 Avg.	2013 Avg.	2014 Avg.
141 Tarnation GT	4.2	4.7	3.6
142 Rebel Advance	4.2	4.3	4.0
143 PST-5BGR	4.2	4.3	4.0
144 Stingray	4.2	4.5	3.8
145 Sitka	4.1	4.5	3.8
146 Endeavor II	4.1	4.4	3.9
147 Cumberland	4.1	3.9	4.3
148 Grande II	4.1	4.2	4.0
149 PST-525D	4.1	4.0	4.1
150 Shenandoah Elite	4.0	3.9	4.2
151 Titanium LS	4.0	4.0	4.0
152 Finelawn Elite	4.0	4.1	3.8
153 Titan Ultra	4.0	4.2	3.7
154 Avenger	4.0	4.0	4.0
155 Penn ATF 1376	3.9	4.4	3.5
156 PST-5SIS	3.9	3.8	4.1
157 Titanium	3.8	4.0	3.7
158 Greystone	3.8	3.9	3.7
159 Coronado TDH	3.7	4.0	3.4
160 Cezanne RZ	3.7	4.0	3.5
161 Titan Rx	3.7	3.9	3.4
162 Virtue II	3.7	3.6	3.7
163 Penn ATF 1258	3.7	4.0	3.3
164 Jaguar 4G	3.6	3.8	3.3
165 Tar Heel II	3.5	3.6	3.4
166 Arid 3	3.4	3.7	3.1
LSD at 5%=	0.6	0.8	0.6

¹9 = best turf quality

Table 3. Performance of tall fescue cultivars and selections in the National Turf Test (NTEP) established in September 2012 at Adelphia, NJ.

Cultivar or Selection	-----Turf Quality ¹ -----			Leaf Texture ² June 2014	Brown Patch ³ Sept. 2014	Color ⁴ Oct. 2014
	2013-2014 Avg.	2013 Avg.	2014 Avg.			
1 Regenerate	6.6	6.6	6.5	7.0	6.3	7.0
2 PPG-TF-152	6.2	6.1	6.3	6.7	6.0	7.0
3 4th Millennium SRP	6.1	6.2	6.1	6.7	6.0	6.0
4 Traverse 2	6.1	6.2	6.0	6.7	5.7	6.3
5 IS-TF 269 SEL	6.1	6.2	5.9	6.3	6.0	8.0
6 PPG-TF-170	6.1	6.0	6.1	6.7	5.7	7.0
7 Firecracker SLS	6.1	6.4	5.8	6.0	4.3	7.3
8 Pick-W43	6.0	5.9	6.1	7.0	6.0	6.7
9 Rockwell	6.0	6.0	6.0	6.7	6.0	7.0
10 PPG-TF-157	6.0	6.1	5.9	5.7	5.7	8.0
11 B23	5.9	6.5	5.4	6.7	4.7	7.7
12 CCR2	5.9	5.8	6.0	6.3	6.0	6.3
13 Avenger II	5.9	5.5	6.3	6.7	4.3	6.3
14 RAD-TF-88	5.9	6.0	5.8	8.7	4.3	6.7
15 Thunderstruck	5.9	6.3	5.5	6.7	5.0	8.0
16 MET 1	5.9	5.8	6.0	7.3	6.0	6.7
17 IS-TF 291	5.8	6.3	5.3	6.0	5.3	7.7
18 IS-TF 285	5.8	6.4	5.2	6.0	4.0	8.0
19 DB1	5.8	5.8	5.8	5.3	5.7	8.3
20 Reflection	5.8	5.5	6.0	6.3	6.3	6.7
21 Raptor III	5.8	5.8	5.7	6.0	5.0	6.7
22 Rowdy	5.7	6.0	5.5	6.7	4.0	6.3
23 IS-TF 310 SEL	5.7	5.8	5.6	6.7	5.3	7.3
24 Temple	5.7	5.7	5.7	5.7	5.7	7.0
25 Firebird 2	5.7	5.7	5.6	6.0	5.3	7.0
26 PPG-TF-150	5.7	5.8	5.5	6.3	5.3	6.0
27 PPG-TF-148	5.7	5.6	5.7	6.0	5.7	5.3
28 MET-3	5.6	5.5	5.8	6.0	6.3	6.0
29 Hot Rod	5.6	5.4	5.8	6.3	5.7	7.0
30 IS-TF 330	5.6	5.8	5.4	5.7	4.7	8.7
31 PPG-TF-137	5.6	5.2	6.0	6.3	5.3	6.7
32 GTO	5.6	5.3	5.8	6.3	5.7	6.0
33 Bullseye	5.6	5.9	5.3	5.3	5.0	7.7
34 IS-TF 282 M2	5.6	5.5	5.6	5.7	5.7	8.7
35 PPG-TF-172	5.6	5.3	5.8	6.3	5.3	7.0

(Continued)

Table 3. Tall fescue turf trial, 2012, NTEP (continued).

Cultivar or Selection	-----Turf Quality ¹ -----			Leaf Texture ² June 2014	Brown Patch ³ Sept. 2014	Color ⁴ Oct. 2014
	2013-2014 Avg.	2013 Avg.	2014 Avg.			
36 Firewall	5.5	5.3	5.8	7.0	5.3	6.7
37 ATF 1612	5.5	5.4	5.6	7.0	5.0	5.7
38 Hemi	5.5	5.2	5.8	6.3	4.7	6.7
39 K12-05	5.5	5.7	5.3	6.7	5.0	8.0
40 RAD-TF-89	5.5	5.7	5.3	7.7	3.3	6.7
41 RAD-TF-92	5.5	5.6	5.4	8.7	4.3	7.0
42 IS-TF 311	5.5	5.5	5.4	6.0	6.0	7.3
43 W41	5.5	5.1	5.8	6.3	5.7	6.3
44 IS-TF 284 M2	5.4	5.6	5.3	6.0	5.0	8.7
45 PPG-TF-139	5.4	5.5	5.3	6.0	4.3	6.0
46 PPG-TF-151	5.4	5.7	5.2	5.7	4.7	7.0
47 Faith	5.4	5.5	5.3	6.0	5.3	6.7
48 RAD-TF-83	5.4	5.5	5.3	7.0	5.0	8.0
49 Maestro	5.4	5.3	5.4	5.3	5.3	6.7
50 Leonardo	5.4	5.2	5.5	6.3	5.0	6.0
51 RZ2	5.4	5.4	5.3	6.3	4.3	5.3
52 Fesnova	5.4	5.7	5.0	5.3	4.7	7.3
53 F711	5.4	5.0	5.7	6.3	5.0	6.0
54 PSG-PO1	5.4	5.4	5.3	6.7	6.0	5.7
55 IS-TF 289	5.3	6.0	4.6	5.3	4.7	8.7
56 IS-TF 308 SEL	5.3	5.0	5.6	5.7	6.3	7.3
57 PPG-TF-169	5.3	4.9	5.7	6.3	5.7	5.3
58 Burl TF-69	5.3	5.4	5.2	7.0	4.3	6.7
59 Bizem	5.3	5.1	5.5	6.0	5.7	6.3
60 PST-5EV2	5.3	5.1	5.4	6.0	5.7	6.7
61 Rhambler 2 SRP	5.2	6.1	4.4	5.7	2.0	6.3
62 Cochise V	5.2	5.0	5.5	6.3	6.3	5.7
63 Grande 3	5.2	4.8	5.7	6.3	6.0	6.0
64 JS 916	5.2	5.2	5.2	6.3	5.0	7.0
65 TF-287	5.2	5.4	5.0	6.0	3.7	6.3
66 Michelangelo	5.2	5.3	5.0	5.0	4.7	5.3
67 PPG-TF-138	5.2	5.1	5.2	5.3	3.7	6.7
68 MET 6 SEL	5.1	4.9	5.4	5.7	6.0	5.0
69 ATF 1754	5.1	5.0	5.2	5.7	4.3	5.3
70 Terrano	5.0	5.5	4.6	5.3	3.0	8.0

(Continued)

Table 3. Tall fescue turf trial, 2012, NTEP (continued).

Cultivar or Selection	-----Turf Quality ¹ -----			Leaf Texture ² June 2014	Brown Patch ³ Sept. 2014	Color ⁴ Oct. 2014
	2013-2014 Avg.	2013 Avg.	2014 Avg.			
71 PPG-TF-115	5.0	5.3	4.8	5.7	4.7	7.3
72 ATF 1704	5.0	4.7	5.2	6.3	5.3	5.0
73 IS-TF 307 SEL	5.0	4.7	5.2	6.0	4.3	8.7
74 IS-TF 276 M2	5.0	5.3	4.6	5.0	4.0	7.7
75 IS-TF 305 SEL	5.0	5.1	4.8	5.0	5.0	8.0
76 Falcon V	4.9	5.0	4.8	6.0	3.3	6.7
77 K12-MCD	4.9	4.9	4.9	6.0	4.3	5.7
78 Meridian	4.9	5.0	4.8	6.7	3.3	6.0
79 PST-5BRK	4.9	5.1	4.6	4.7	4.3	4.3
80 PST-5MVD	4.9	4.9	4.8	5.3	5.0	6.3
81 TY 10	4.8	5.2	4.5	6.3	4.0	8.7
82 IS-TF 272	4.8	4.7	4.9	6.3	4.7	8.7
83 Comp. Res. SST	4.8	4.7	4.9	6.7	4.0	6.7
84 Memphis	4.8	4.9	4.7	6.3	3.7	8.3
85 ATF 1736	4.8	4.9	4.6	5.3	5.0	6.0
86 OR-21	4.7	5.2	4.3	5.3	4.7	9.0
87 JS 818	4.7	5.1	4.2	4.7	4.3	8.3
88 PPG-TF-142	4.7	4.8	4.5	5.3	3.7	8.3
89 Catalyst	4.7	4.6	4.7	6.0	2.3	5.7
90 Saltillo	4.6	4.7	4.5	5.0	6.0	5.0
91 BAR Fa 121095	4.6	4.6	4.6	5.3	5.0	7.0
92 JS 819	4.6	5.0	4.2	5.7	3.3	8.0
93 Exp TF-09	4.6	5.0	4.2	5.3	3.7	8.7
94 PST-5DZP	4.5	4.9	4.2	5.3	3.7	7.7
95 PST-5RO5	4.5	4.5	4.4	4.3	3.3	6.7
96 PSG-GSD	4.4	4.6	4.2	5.0	3.3	5.7
97 Dynamite LS	4.4	4.8	4.0	5.0	2.3	8.0
98 JS 809	4.4	4.7	4.1	5.7	3.3	8.0
99 Marauder	4.4	4.2	4.5	6.3	3.3	6.7
100 K12-13	4.4	4.4	4.3	6.3	3.7	8.0
101 Annihilator	4.3	4.2	4.3	4.7	5.0	7.7
102 PST-5BPO	4.3	4.0	4.5	5.0	5.3	4.3
103 BAR Fa 121089	4.3	4.2	4.3	4.3	4.3	7.3
104 Falcon IV	4.3	4.6	3.9	4.7	3.0	7.0
105 PSG-8BP2	4.2	4.5	4.0	4.7	3.3	7.3

(Continued)

Table 3. Tall fescue turf trial, 2012, NTEP (continued).

Cultivar or Selection	-----Turf Quality ¹ -----			Leaf Texture ² June 2014	Brown Patch ³ Sept. 2014	Color ⁴ Oct. 2014
	2013-2014 Avg.	2013 Avg.	2014 Avg.			
106 PSG-TT4	4.1	4.2	4.1	5.3	5.0	5.7
107 204 Res. Blk 4	4.1	4.1	4.1	6.3	3.7	4.3
108 Rain Dance	4.1	4.1	4.1	4.0	5.3	5.7
109 Warhawk	3.9	4.0	3.7	5.0	3.7	8.3
110 JS 825	3.9	4.3	3.4	4.0	3.0	8.3
111 Inspiration	3.7	4.1	3.3	4.0	3.3	5.3
112 Aquaduct	3.7	3.8	3.5	4.3	3.3	6.7
113 PST-5EX2	3.4	3.5	3.3	2.7	6.0	3.7
114 BAR Fa 121091	3.2	3.0	3.5	4.0	4.7	8.3
115 BAR Fa 120878	2.3	2.6	2.1	1.3	3.3	5.0
116 Ky-31	1.3	1.3	1.3	1.0	2.7	1.0
LSD at 5% =	0.6	0.8	0.7	1.1	1.6	1.3

¹9 = best turf quality

²9 = finest texture

³9 = least disease

⁴9 = darkest green cover

Table 4. Performance of tall fescue cultivars and selections in the A-LIST Test established in September 2013 at Adelphia, NJ.

Cultivar or Selection	Turf Quality ¹ 2014 Avg.	Establishment ² Sept. 2013
1 Titanium 2LS	6.7	6.7
2 DLF 3279	6.6	6.3
3 Screamer LS	6.4	6.0
4 DLF 3431	6.3	6.3
5 Michelangelo	6.1	6.7
6 DLF 3438	6.1	5.0
7 Raptor III	6.0	6.3
8 PPG-TF 170	6.0	6.3
9 Spyder LS	5.9	7.0
10 Avenger II	5.9	6.3
11 Leonardo	5.9	6.3
12 DaVinci	5.8	5.3
13 Monet	5.8	6.7
14 Speedway	5.8	5.0
15 Firecracker SLS	5.7	7.0
16 Rockwell	5.7	6.3
17 Avenger	5.6	5.3
18 Grande 3	5.6	5.0
19 Crossfire 3	5.6	5.0
20 Mustang 4	5.4	6.7
21 Cezanne Rz	5.3	5.7
22 Masterpiece	5.2	6.0
23 Stingray	5.1	6.7
24 Titanium LS	4.9	5.0
25 Rembrandt	4.8	6.0
26 Van Gogh	4.7	5.7
27 Bladerunner 2	4.7	6.7
28 Picasso	4.6	6.0
29 Guardian 41	4.6	3.3
LSD at 5% =	1.1	1.5

¹9 = best turf quality

²9 = fastest establishment

Table 5. Performance of tall fescue cultivars and selections in a low maintenance test established in September 2013 at Adelphia, NJ.

Cultivar or Selection	Turf Quality ¹ 2014 Avg.	Establishment ² Sept. 2013
1 PPG-TF 190	6.4	5.0
2 PPG-TF 180	6.2	5.7
3 TA2 Comp	6.1	5.3
4 PPG-TF 198	6.1	6.3
5 PPG-TF 143	6.0	4.3
6 PPG-TF 203	6.0	4.7
7 PPG-TF 189	6.0	5.3
8 PPG-TF 195	6.0	6.0
9 PPG-TF 182	5.9	5.0
10 PPG-TF 191	5.9	5.3
11 Titanium 2LS	5.9	3.7
12 Bizem	5.7	3.7
13 PPG-TF 173	5.6	4.0
14 PPG-TF 172	5.6	4.7
15 PPG-TF 193	5.6	5.7
16 PPG-TF 154	5.5	3.3
17 PPG-TF 178	5.5	3.7
18 PPG-TF 153	5.5	3.7
19 PPG-TF 177	5.5	3.7
20 TA1 Comp	5.5	5.3
21 PPG-TF 174	5.4	4.0
22 TA3 Comp	5.2	5.0
23 3T1 Comp	4.6	6.0
24 3T3 Comp	4.6	5.3
25 3T2 Comp	4.3	5.3
LSD at 5% =	1.1	0.9

¹9 = best turf quality

²9 = fastest establishment

Table 6. Performance of tall fescue cultivars and selections in a turf trial established in September 2013 at Adelphia, NJ.

Cultivar or Selection	Turf Quality ¹ 2014 Avg.	Establishment ² Sept. 2013	Brown Patch ³ Aug. 2014
1 Raptor III	6.5	5.3	5.3
2 305 Comp	6.3	5.3	5.7
3 Firewall	6.2	5.7	5.0
4 TMT Comp	6.1	5.7	5.3
5 B23	6.0	6.3	4.3
6 1-11 TF-12	5.9	5.3	4.7
7 1-11 TF-19	5.9	5.0	3.7
8 Rowdy	5.9	5.3	6.0
9 Avenger II	5.8	6.3	5.0
10 Screamer LS	5.8	6.0	5.7
11 RZ2	5.8	5.7	4.7
12 PPG-TF 195	5.8	5.3	5.3
13 W43	5.8	5.7	6.0
14 8G1643-6	5.8	4.7	4.0
15 PSM-6351	5.8	6.0	5.0
16 1-11 TF-1	5.7	5.0	5.7
17 Terrano	5.7	5.7	4.0
18 Raptor III	5.7	5.3	4.7
19 Titanium 2LS	5.7	4.7	6.0
20 PPG-TF 170	5.7	5.3	5.3
21 PPG-TF 154	5.7	4.3	4.3
22 Fesnova	5.6	6.0	4.0
23 Ventura	5.6	4.3	5.3
24 Shortstop 3	5.6	4.3	5.0
25 1-11 TF-11	5.6	5.0	5.7
26 301 Comp	5.6	5.7	5.7
27 1-11 TF-13	5.6	4.7	4.0
28 GO-AOTF	5.6	5.0	4.0
29 MET2	5.6	4.7	4.7
30 PPG-TF 177	5.6	4.3	4.3
31 1-11 TF BULK	5.6	5.0	3.7
32 PPG-TF 182	5.6	4.7	5.0
33 Meridian	5.5	5.3	4.0
34 PST-5MINI	5.5	5.7	5.3
35 PST-Syn-5DAW	5.5	4.7	4.0

(Continued)

Table 6. Tall fescue turf trial, 2013 (continued).

	Cultivar or Selection	Turf Quality ¹ 2014 Avg.	Establishment ² Sept. 2013	Brown Patch ³ Aug. 2014
36	8G1643-5	5.5	4.3	4.7
37	1-11 TF-5	5.5	5.3	4.3
38	Bizem	5.5	4.7	4.7
39	PPG-TF 180	5.5	5.0	5.0
40	Maestro	5.5	6.3	5.7
41	Ares	5.5	5.0	5.0
42	PPG-TF 190	5.5	5.0	4.3
43	PPG-TF 203	5.5	4.7	4.3
44	PO1	5.5	5.0	5.0
45	Persuasion	5.5	5.7	3.7
46	PPG-TF 198	5.5	5.3	4.3
47	PST-5WAL	5.4	5.3	5.3
48	304 Comp	5.4	5.0	4.7
49	Firecracker SLS	5.4	6.3	4.0
50	Cochise IV	5.4	6.0	4.3
51	PPG-TF 173	5.4	4.3	4.3
52	PST-5DZP	5.4	4.3	4.3
53	PST-5EV2	5.4	5.7	5.3
54	Mustang 4	5.4	6.3	5.7
55	Grande 3	5.4	5.0	5.7
56	06-11 TF-4	5.4	4.7	4.0
57	1-11 TF-14	5.4	5.0	4.3
58	4-11 TF-3	5.4	4.7	4.0
59	PST-5BRK	5.3	6.0	4.7
60	PST-5MCD	5.3	6.0	5.3
61	Inspiration	5.3	5.3	4.0
62	Gazelle II	5.3	5.7	4.0
63	1-11 TF-7	5.3	5.0	4.3
64	Faith	5.3	5.3	5.3
65	Reflection	5.3	5.0	4.0
66	PPG-TF 191	5.3	5.7	4.7
67	Hudson	5.3	6.0	3.0
68	8G1643-4	5.3	5.0	5.0
69	8BP2 BULK	5.3	5.7	5.0
70	4-11 TF-7	5.3	5.3	4.7

(Continued)

Table 6. Tall fescue turf trial, 2013 (continued).

Cultivar or Selection	Turf Quality ¹ 2014 Avg.	Establishment ² Sept. 2013	Brown Patch ³ Aug. 2014
71 PPG-TF 153	5.3	4.7	4.3
72 PPG-TF 172	5.3	4.7	5.7
73 Shenandoah III	5.3	5.7	4.7
74 3rd Millennium	5.3	7.0	3.7
75 GSD	5.3	5.7	5.0
76 TF-09-1-3	5.3	4.7	4.0
77 Shenandoah Elite	5.3	4.7	4.0
78 PST-5BPO	5.2	4.3	3.3
79 Speedway	5.2	4.3	5.0
80 1-11 TF-2	5.2	5.7	4.7
81 302 Comp	5.2	5.7	4.3
82 303 Comp	5.2	6.0	4.7
83 PPG-TF 174	5.2	4.0	5.3
84 Cumberland	5.2	6.0	4.0
85 Saltillo	5.2	6.3	3.3
86 8G1643-10	5.2	5.0	4.7
87 8BP2-7	5.2	4.7	4.7
88 4-11 TF-5	5.2	5.3	4.7
89 4-11 TF-6	5.2	5.7	4.0
90 Dynamite LS	5.2	5.0	4.7
91 PST-5SDS	5.2	5.0	4.3
92 8G1643-1	5.2	5.0	4.7
93 TF 11-2 15	5.2	5.0	4.0
94 TF-09-1-2	5.2	4.7	3.7
95 TF-09-1-5	5.2	4.3	4.0
96 06-11 TF-15	5.2	4.7	4.7
97 YA1	5.2	5.0	4.3
98 PPG-TF 193	5.2	5.7	5.0
99 SC-1	5.2	5.0	4.3
100 Inferno	5.1	5.7	4.0
101 Crossfire 3	5.1	4.0	4.3
102 PPG-TF 189	5.1	5.7	4.7
103 Quest	5.1	6.0	3.0
104 8G1643 BULK	5.1	4.7	4.3
105 PPG-TF 178	5.1	4.7	5.3

(Continued)

Table 6. Tall fescue turf trial, 2013 (continued).

Cultivar or Selection	Turf Quality ¹ 2014 Avg.	Establishment ² Sept. 2013	Brown Patch ³ Aug. 2014
106 Guardian 41	5.1	3.0	4.0
107 06-11 TF-3	5.1	4.7	3.3
108 4-11 TF-9	5.1	5.0	5.0
109 Monet	5.1	6.7	3.3
110 Padre	5.1	5.7	4.0
111 8BP2-4	5.0	5.3	4.0
112 GO-MNKY	5.0	4.7	3.3
113 Tarnation GT	5.0	6.3	4.7
114 PST-5W03	5.0	6.3	5.0
115 FA-10-9-1	5.0	5.3	3.7
116 Talladega	5.0	4.7	3.7
117 BMT	5.0	4.7	3.3
118 PST-5BGR	5.0	4.7	4.3
119 8G1643-9	5.0	5.3	4.7
120 PSG 08-6	5.0	4.7	4.0
121 06-11 TF-14	5.0	5.0	3.7
122 8BP2-6	5.0	5.3	4.7
123 Summer	4.9	6.0	2.7
124 8G1643-2	4.9	5.0	4.7
125 TF-09-1-9	4.9	5.3	4.0
126 1-11 TF-16	4.9	5.0	4.0
127 8BP2-1	4.9	4.7	4.7
128 8BP2-3	4.9	6.3	4.0
129 Regenerate	4.9	6.0	3.7
130 Tar Heel II	4.9	5.3	4.0
131 TF 11-2 3	4.9	5.0	4.3
132 Stingray	4.9	6.0	4.0
133 Bullseye	4.9	5.3	4.7
134 Renegade Supreme	4.9	5.7	4.0
135 77-08TF	4.9	5.3	5.0
136 Falcon IV	4.9	5.7	4.0
137 PST-5EX2	4.8	5.3	4.7
138 PST-5MVD	4.8	5.0	5.0
139 TF-09-1-7	4.8	5.7	3.3
140 06-11 TF BULK	4.8	5.3	4.7

(Continued)

Table 6. Tall fescue turf trial, 2013 (continued).

Cultivar or Selection	Turf Quality ¹ 2014 Avg.	Establishment ² Sept. 2013	Brown Patch ³ Aug. 2014
141 06-11 TF-12	4.8	4.7	4.0
142 8BP2-5	4.8	5.0	5.3
143 8NJMT	4.8	5.0	4.0
144 Spyder LS	4.8	5.7	4.7
145 Xtender	4.8	5.3	4.3
146 ATV 412	4.8	5.3	3.7
147 Bladerunner 2	4.8	6.7	4.7
148 FA-10-9-12	4.8	5.0	3.3
149 TF-09-1-8	4.8	5.0	3.3
150 06-11 TF-16	4.8	4.7	4.0
151 06-11 TF-18	4.8	5.0	3.7
152 4-11 TF BULK	4.8	5.0	3.7
153 Maestro	4.8	6.3	5.0
154 FA-10-9 BULK	4.8	5.3	3.3
155 FA-10-9-5	4.8	5.3	4.3
156 8BP2-8	4.8	5.3	4.7
157 PST-5T20	4.7	6.0	4.7
158 Sequester	4.7	6.7	3.0
159 8ST10W-6	4.7	4.0	4.3
160 PPG-TF 143	4.7	4.3	4.7
161 Jaguar 4G	4.7	5.3	3.0
162 TF 11-2 4	4.7	4.7	4.0
163 TF 09-6	4.7	5.3	4.7
164 4-11 TF-4	4.7	5.7	5.0
165 4-11 TF-12	4.7	5.0	5.0
166 Covenant II	4.7	6.0	4.0
167 Sungazer	4.7	5.7	3.7
168 Crewcut II	4.7	4.7	4.3
169 FA-10-9-6	4.7	5.3	3.7
170 FA-10-9-7	4.7	5.0	3.3
171 TF 11-2 10	4.7	5.3	4.0
172 PST-5BGR	4.7	6.0	3.3
173 Falcon IV	4.7	6.0	5.0
174 TF-09-1-11	4.6	5.7	3.7
175 8NJMD	4.6	5.7	3.7

(Continued)

Table 6. Tall fescue turf trial, 2013 (continued).

Cultivar or Selection	Turf Quality ¹ 2014 Avg.	Establishment ² Sept. 2013	Brown Patch ³ Aug. 2014
176 DaVinci	4.6	5.7	4.0
177 AT51	4.6	5.7	3.7
178 Titan Rx	4.6	5.7	3.3
179 8G1643-8	4.6	5.0	4.7
180 Wolfpack II	4.6	4.7	5.0
181 Justice	4.6	6.3	4.0
182 SR 8650	4.6	2.3	4.3
183 TF 11-2 BULK	4.6	5.0	4.3
184 Blackwatch 2	4.5	5.0	4.3
185 TF 11-2 14	4.4	5.0	3.7
186 Shenandoah II	4.4	6.3	3.3
187 Cezanne RZ	4.4	5.3	3.0
188 ATF 1532	4.4	5.7	3.7
189 Titan Ultra	4.3	5.7	2.7
190 4-11 TF-1	4.3	5.3	3.7
191 TF-09-1 BULK	4.3	5.3	4.0
192 Rendition Rx	4.2	6.3	3.3
193 8ST10W-8	4.2	4.3	3.7
194 Arid 3	4.2	5.7	4.0
195 8ST10W-1	4.1	4.3	4.3
196 Masterpiece	4.0	6.3	3.0
197 6-5-09TF	3.7	5.3	2.3
198 Scorpion II	3.5	5.7	4.0
199 AGRFA-190	2.5	7.0	2.7
LSD at 5%=	0.8	1.1	1.6

¹9 = best turf quality

²9 = fastest establishment

³9 = least disease

Table 7. Yearly nitrogen (N) applied and mowing height (Ht) on tall fescue tests established at Adelphia, NJ.

	2011		2012		2013		2014	
	N ¹	Ht ²	N	Ht	N	Ht	N	Ht
Table 1 (2011).....	3.5	1.5	3.75	1.5	3.75	1.5	2.00	1.5
Table 2 (2012).....			3.75	1.5	3.75	1.5	3.65	1.5
Table 3 (2012 NTEP).....			3.75	1.5	3.75	1.5	3.65	1.5
Table 4 (2013 A-LIST).....							1.00	2.5
Table 5 (2013 Low maintenance).....							1.00	2.5
Table 6 (2013).....							4.30	1.5

¹Annual N applied (lb/1000 ft²)

²Mowing height in inches