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This publication includes lecture notes of papers presented at the 2012 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.) Darbysh.], a cool season grass, native to Europe and some parts of Africa (Bucker et al., 1979), was introduced in 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 was extended as a 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 in United States because of its winter hardiness, adaptability to wider range of soils, tolerance to shade and drought tolerance, and persistence. Tall fescue has a deep root system that, while enhancing drought tolerance, 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. One of the major limitations of tall fescue is susceptibility to brown patch, 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. Presently, 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.

Tall fescue has been reported to have symbiotic relationship with endophytic fungi that live 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.

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 2008 and 2011 (Tables 1 to 4). All tests were established in September by hand sowing 0.88 oz of seed per 3 x 5 ft plot (3.7 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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The field trial established in 2008 was sprayed with spring and fall applications of Three-way Ester (isooctyl (2-ethylhexyl) ester of 2-methyl-4-chlorophenoxyacetic acid) at the rate of 3.5 pt per acre and Banvel (3, 6-dichloro-O-anisic acid) at the rate of 20 oz per acre to control broadleaf weeds; Dimension (dithiopyr: 3,5-pyridinecarbothioic acid,2-(difluoromethyl)-4-(2-methylpropyl)-6-(trifluoromethyl)-S,S dimethyl ester) was sprayed at the rate of 16 oz per acre as pre-emergent each spring; and Segway (4-chloro-2-cyano-N, N-dimethyl- 5-p-tolylimidazole-1-sulfonamide) was applied at the rate of 31 oz per acre to control Pythium blight disease. The field trial established in 2009 was sprayed with two applications of Dimension at the rate of 16 oz per acre as a pre-emergent weed control, and Segway was applied at the rate of 31 oz per acre to control Pythium blight disease. The two applications of Dimension were applied at the rate of 16 oz per acre, Three-way Ester at the rate of 3.5 pt per acre, and Banvel at the rate of 2.0 oz per acre in the field trial established in 2010.

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 was varied to encourage disease and other stresses (Table 5). The trial established in year 2011 had an application of 10-10-10 fertilizer at the rate of 1.0 lb 1000 ft² at establishment. Field trials were mowed regularly (approximately 1 to 2 times per week) with reel 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 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 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.

Inoculation

The 2010 and 2011 tall fescue tests (Tables 3 and 4) were screened for resistance to brown patch following field inoculation with two isolates of *R. solani*. Inoculum was prepared by growing two isolates of the fungus 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 per m² in the month of June. To ensure favorable disease development water was applied to the field immediately after inoculation.

RESULTS AND DISCUSSION

Results of tall fescue tests are found in Tables 1 through 4. All tests are ranked by overall (multi-year) turf quality average. 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

Selections and cultivars such as B31 Comp, Regenerate, PO1 Comp, B23 Comp, LSD Comp, Shenandoah Elite, W43 comp, Falcon V, F9E Comp, WE2 Comp, CCR2 Comp, WE1 Comp, Faith, Shenandoah III, Mustang 4, Cochise IV,RZ1 Comp, RZ2 Comp, Jamboree, Mustang 4, Penn RK-4, U41 Comp, U44 Comp, Firecracker LS, TF 225, TF 227, Grande 3, RAD-TF 69, RAD-TF 75, Golconda, PPG TF 140, PPG TF 14, Spyder, and Dorado have performed consistently well in multiple trials in the years 2008 to 2011 (Tables 1 to 4). 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

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. The data from Tables 3 and 4 illustrate significant brown patch resistance in

selections and cultivars such as Regenerate, CCR2 Comp, Falcon V, PPG-TF 116, WE 2-Comp, RAD TF 77, W43 Comp, PPG TF 141, MET1 Comp, PPG TF 122, Rebel Xtreme, PST-Syn-5BPO, PST-Syn-5EXT, PST-Syn-5RTY, ATF 1731, ATF 1704, Rebel Advance, GSD, Virtue II, Van Gogh, MET5 Comp, PST-5V4, PPG TF 139, Rebel Advance, RZ2 Comp, RZ1 Comp, and B23-11.

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 that exhibited rapid establishment in 2011 were Teton, Montana, Regenerate, Golcando, Grande 3, Dorado, Tonto, ATF 1740, MET3 Comp, GSD, ATF 1706, SR 8650, PSG 8TST4, Rembrandt, Renegade Supreme, ATF 1533, Endeavor II, Rebel XLR, Faith, Greystone II, Grande 2, Greenkeeper, Gazelle II, MET3 Comp, ATF-1257, and ATF-1707 (Table 4).

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 the cultivars and germplasm help 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.

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Table 1. Performance of tall fescue cultivars and selections in a turf trial established in September 2008 at Adelphia, NJ.

Cultivar or Selection	-----Turf Quality ¹ -----				
	2009-2012 Avg.	2009 Avg.	2010 Avg.	2011 Avg.	2012 Avg.
1 PO1 Comp	7.2	6.8	7.2	7.3	7.4
2 B23 Comp	6.8	6.5	6.8	6.9	7.2
3 LSD Comp	6.8	6.8	6.8	6.8	6.8
4 PSM 6351 BS	6.8	6.7	6.8	7.0	6.6
5 POM	6.8	6.3	6.4	6.9	7.6
6 TPF Comp	6.7	6.5	6.7	6.7	7.0
7 Regenerate	6.7	6.7	5.8	6.8	7.5
8 PST-5AWT	6.6	6.3	6.7	6.9	6.6
9 TPC Comp	6.5	6.5	6.6	6.3	6.6
10 Cochise IV	6.4	6.7	6.7	6.0	6.4
11 IS-TF-178	6.4	6.4	6.8	6.2	6.4
12 Shenandoah Elite	6.4	6.2	6.4	6.5	6.7
13 Falcon V	6.4	6.2	6.4	6.3	6.7
14 Firecracker LS	6.4	6.3	6.2	6.4	6.8
15 IS-TF-179	6.4	6.3	6.4	6.4	6.5
16 IS-TF-177	6.3	6.4	6.8	6.2	5.9
17 Faith	6.3	6.4	6.4	5.9	6.5
18 60-08-2	6.3	6.3	6.5	6.1	6.1
19 IS-TF-175	6.2	6.0	6.5	6.3	6.1
20 Penn RK4	6.2	6.0	6.1	6.3	6.5
21 60-08-8	6.2	6.1	6.6	6.0	6.1
22 Mustang 4	6.2	6.1	6.0	6.0	6.6
23 Garrison	6.2	6.3	6.1	6.3	6.1
24 Spyder LS	6.2	6.2	6.3	5.9	6.3
25 Jamboree	6.2	6.1	6.1	6.5	6.0
26 Speedway	6.2	5.7	6.3	6.2	6.5
27 Side Winder	6.1	6.1	6.2	6.0	6.2
28 59-08-11	6.1	6.1	5.9	5.8	6.5
29 60-08-6	6.1	5.9	6.3	6.4	5.8
30 BIZM	6.1	5.9	5.8	6.0	6.5
31 Essential	6.1	5.8	6.0	6.3	6.2
32 Rocket	6.1	5.8	6.1	6.0	6.3
33 Shenandoah III	6.0	5.8	5.8	6.3	6.3
34 60-08-9	6.0	6.0	6.4	5.9	5.8
35 Finelawn Express	6.0	5.8	5.9	6.1	6.2

(Continued)

Table 1. Tall fescue turf trial, 2008 (continued).

Cultivar or Selection	-----Turf Quality ¹ -----				
	2009-2012 Avg.	2009 Avg.	2010 Avg.	2011 Avg.	2012 Avg.
36 59-08-02	6.0	6.0	5.9	5.9	6.2
37 TWA Comp	6.0	5.6	6.0	6.1	6.3
38 3rd Millennium	5.9	5.8	6.0	6.0	5.9
39 59-08-08	5.9	5.6	5.7	6.0	6.4
40 59-08-12	5.9	6.2	5.9	5.9	5.7
41 PCO Comp	5.9	5.8	6.2	5.9	5.7
42 Van Gogh	5.9	5.8	5.9	5.5	6.4
43 PO3 Comp	5.8	6.0	5.9	5.4	5.9
44 60-08-5	5.8	5.9	5.8	5.8	5.8
45 59-08-06	5.8	6.2	6.0	5.1	6.0
46 PO2 Comp	5.8	5.8	5.9	5.5	6.1
47 GSD Comp	5.8	5.9	6.2	5.3	5.8
48 PST-5A4S	5.8	6.2	5.8	5.5	5.7
49 FSD Comp	5.8	5.4	6.2	5.8	5.6
50 72-08-1	5.8	5.6	5.8	5.9	5.7
51 Shortstop 3	5.8	5.7	6.1	5.5	5.7
52 Monet	5.7	5.3	5.7	5.8	6.1
53 Trio	5.7	5.6	6.1	5.4	5.7
54 59-08-01	5.7	5.7	5.5	5.7	5.7
55 60-08-7	5.7	5.6	5.8	5.6	5.6
56 Fat Cat	5.6	5.9	5.6	5.4	5.7
57 PSG 8SP1	5.6	5.4	5.5	5.6	6.1
58 BSD Comp	5.6	5.3	5.7	5.8	5.7
59 84-08 Bulk	5.6	5.3	5.8	5.5	5.9
60 NSD Comp	5.6	5.7	6.2	5.1	5.5
61 60-08-4	5.6	5.9	6.0	5.3	5.2
62 84-08-2	5.6	5.4	5.9	5.5	5.7
63 72-08 Bulk	5.6	5.6	5.4	5.6	5.8
64 Persuasion	5.6	5.6	5.8	5.2	5.7
65 Guardian 41	5.6	5.2	5.7	5.4	6.1
66 59-08 Bulk	5.5	5.7	5.7	5.1	5.7
67 72-08-3	5.5	5.8	5.6	5.1	5.7
68 Deputy	5.5	5.3	5.9	5.4	5.5
69 60-08-3	5.5	5.4	5.9	4.9	5.6
70 84-08-1	5.4	5.2	5.4	5.2	6.0

(Continued)

Table 1. Tall fescue turf trial, 2008 (continued).

Cultivar or Selection	-----Turf Quality ¹ -----				
	2009-2012 Avg.	2009 Avg.	2010 Avg.	2011 Avg.	2012 Avg.
71 60-08-1	5.4	5.5	5.5	5.4	5.3
72 SR 8650	5.4	6.1	5.5	4.8	5.3
73 84-08-3	5.4	5.6	5.6	5.1	5.3
74 RAD-TF58	5.4	5.4	5.6	5.3	5.2
75 Titanium LS	5.4	5.3	5.4	5.3	5.5
76 ATE	5.3	5.8	5.1	4.9	5.3
77 Inferno	5.3	5.5	5.3	4.8	5.3
78 PST-5SXR	5.3	4.9	5.4	5.2	5.6
79 72-08-2	5.2	5.2	5.2	5.4	5.2
80 PST-5R05	5.2	4.8	5.1	5.1	5.7
81 PST-5DVD-07	5.2	4.9	4.9	5.1	5.8
82 Blade Runner II	5.1	5.7	5.2	4.9	4.7
83 Renegade Supreme	5.1	5.5	5.2	4.8	5.0
84 Falcon NG	5.1	5.1	4.7	5.1	5.6
85 ATF-1334	5.1	5.6	5.4	4.6	5.0
86 STR 86QR	5.1	5.8	4.9	4.6	5.1
87 RAD-TF57	5.1	6.1	5.3	4.7	4.3
88 Stingray	5.1	5.8	5.4	4.2	4.9
89 Rebel IV	5.1	5.5	5.4	4.7	4.7
90 RAD-TF60	5.0	5.7	5.1	4.8	4.5
91 Rambler	5.0	5.7	4.9	4.5	5.0
92 RAD-TF-31	5.0	5.1	5.3	4.6	5.1
93 Rebel Exeda	5.0	5.0	5.3	4.8	4.9
94 Pedigree	5.0	5.0	5.3	4.6	5.0
95 RAD-TF59	5.0	5.1	5.5	4.7	4.6
96 Falcon IV	5.0	5.3	5.2	4.8	4.7
97 Da Vinci	5.0	5.0	5.0	4.9	4.9
98 60-08-10	4.9	5.5	5.2	4.3	4.5
99 ATF-1294	4.9	5.1	4.8	4.9	4.7
100 Six Point	4.9	5.2	4.8	4.4	5.0
101 RAD-TF56	4.8	4.9	5.4	4.3	4.8
102 Cayenne	4.8	4.8	4.9	4.6	4.9
103 Shenandoah Sport	4.8	5.2	5.0	4.5	4.6
104 Ninja 3	4.8	4.8	4.9	4.8	4.7
105 STR 8GRQR	4.8	5.1	5.2	4.4	4.5

(Continued)

Table 1. Tall fescue turf trial, 2008 (continued).

Cultivar or Selection	-----Turf Quality ¹ -----				
	2009-2012 Avg.	2009 Avg.	2010 Avg.	2011 Avg.	2012 Avg.
106 PST-5FDR	4.8	5.2	5.0	4.4	4.4
107 05FA-01	4.7	5.8	4.4	4.2	4.5
108 03FA-05	4.7	5.3	4.7	4.4	4.5
109 PSG 8AZRH2	4.7	5.5	4.6	4.3	4.5
110 Justice	4.7	5.1	4.6	4.7	4.5
111 RNP	4.7	5.7	4.7	4.2	4.3
112 59-08-03	4.7	5.5	4.7	4.1	4.6
113 59-08-10	4.7	5.5	4.1	4.4	4.7
114 59-08-05	4.6	5.6	4.8	4.0	4.2
115 Tulsa Time	4.6	5.6	5.1	3.7	4.1
116 59-08-04	4.6	5.9	4.1	3.9	4.6
117 ATF-1327	4.6	4.6	4.7	4.4	4.8
118 Traverse SRP	4.6	4.9	4.1	4.4	5.0
119 ATF-1301	4.6	5.2	4.9	4.1	4.1
120 59-08-09	4.6	4.9	4.4	4.3	4.7
121 PSG DDMQR	4.6	5.5	4.4	3.9	4.3
122 Rebel Sentry	4.5	4.5	4.6	3.2	3.8
123 Jaguar 4G	4.5	5.1	4.8	3.8	4.4
124 PSG TTQR	4.5	4.8	5.1	4.0	4.0
125 PST-Syn-5T8	4.5	4.2	4.4	4.3	5.0
126 Rembrandt	4.4	4.4	4.4	4.1	4.7
127 IS-TF-67	4.4	5.1	4.6	3.7	4.3
128 59-08-07	4.4	5.3	4.1	3.8	4.5
129 Forte	4.4	5.3	4.7	3.7	3.9
130 PST-Syn-R5B4	4.4	4.7	4.4	4.0	4.5
131 Rebel Advance	4.4	5.5	4.4	3.6	4.0
132 Virtue II	4.4	4.9	4.3	4.0	4.3
133 Picasso	4.3	4.9	4.7	3.8	3.8
134 SR 8550	4.3	5.5	4.5	3.6	3.7
135 Coronado TDH	4.3	5.1	4.4	3.6	4.1
136 84-08-4	4.3	4.9	4.1	4.0	4.1
137 Quest	4.3	4.8	4.5	3.7	4.2
138 Guardian 21	4.3	4.9	4.6	3.8	3.7
139 Blackwatch	4.3	5.1	4.7	3.6	3.6
140 Signia	4.2	5.4	4.9	3.6	3.0

(Continued)

Table 1. Tall fescue turf trial, 2008 (continued).

Cultivar or Selection	-----Turf Quality ¹ -----				
	2009-2012 Avg.	2009 Avg.	2010 Avg.	2011 Avg.	2012 Avg.
141 Masterpiece	4.2	4.1	4.6	4.1	4.1
142 PSG RNDR	4.2	4.8	4.4	3.8	3.9
143 CE4	4.2	4.9	4.1	3.7	4.0
144 Brockton	4.2	4.8	4.4	3.5	3.9
145 03FA-07	4.2	5.3	4.2	3.4	3.9
146 PST-5SIS	4.2	4.0	4.2	3.9	4.6
147 Grande II	4.1	4.5	4.6	3.5	3.7
148 PST-5BAB	4.1	4.6	4.4	3.6	3.7
149 PSG TTRH	4.1	4.4	4.4	3.4	4.0
150 Scorpion II	4.0	4.9	4.4	3.5	3.2
151 Crewcut II	4.0	4.8	4.4	3.1	3.6
152 Penn 1901	4.0	4.8	4.3	3.3	3.4
153 PSG 8AZRH	4.0	4.9	4.1	3.2	3.6
154 PSG 8GRTR	3.9	4.2	3.9	3.5	3.9
155 Regiment II	3.8	3.9	4.0	3.5	3.7
156 PST-5SHZ-04	3.7	4.4	3.9	2.9	3.7
157 Durana	3.7	4.2	4.2	3.1	3.3
158 Turbo	3.7	4.3	4.1	3.1	3.3
159 PSG TTST	3.6	4.0	3.9	3.1	3.6
160 Rebel Pro	3.5	4.1	4.2	2.9	2.9
161 Greystone	3.5	3.9	3.8	3.0	3.3
162 Arid 3	3.5	3.9	4.2	2.8	3.1
163 SR 8600	3.4	3.8	3.7	3.0	3.2
164 Watchdog	3.4	3.7	3.7	3.1	3.1
165 Regiment II	3.2	3.5	3.3	3.0	3.1
166 Rebel 2000	3.2	3.9	3.5	2.6	2.8
167 Prospect	3.2	3.9	3.5	2.9	2.4
168 Tulsa II	3.1	3.2	3.3	2.8	3.2
169 Grande	2.7	3.1	3.0	2.3	2.3
170 Durango	2.6	2.8	2.6	2.3	2.6
171 Jaguar 3	2.5	1.8	3.1	2.9	2.3
172 Rebel III	2.3	2.7	2.7	1.7	2.1
LSD at 5% =	0.5	0.8	0.7	0.8	0.7

¹9 = best turf quality

Table 2. Performance of tall fescue cultivars and selections in a turf trial seeded in September 2009 at Adelphia, NJ.

Cultivar or Selection	-----Turf Quality ¹ -----		
	2010-2012 Avg.	2010 Avg.	2011 Avg.
1 B31 Comp	6.7	7.0	6.4
2 Regenerate	6.6	6.5	6.8
3 F9E Comp	6.3	6.7	6.0
4 PPG-TF 104	6.2	6.4	6.1
5 PST-5AWT-08	6.2	6.3	5.8
6 T31 Comp	6.2	6.1	5.9
7 PPG-TF 103	6.1	6.5	5.8
8 PPG-TF 102	6.1	6.4	6.0
9 PST-5GRB	6.1	5.7	6.1
10 TF 225	6.0	6.4	5.8
11 TF 197	6.0	6.1	5.9
12 PST-5MCD	6.0	6.0	5.6
13 TF 196	5.9	6.1	5.8
14 Cannavaro	5.9	6.2	5.7
15 PPG-TF 101	5.8	6.0	5.5
16 Rhambler SRP	5.8	6.1	5.7
17 Talladega	5.8	5.8	5.4
18 PST-5SRX	5.8	5.9	6.0
19 Faith	5.7	5.8	6.0
20 WDA3 Comp	5.7	5.8	6.0
21 DP50-9470	5.7	5.9	5.2
22 TF 223	5.7	5.5	5.3
23 TF 226	5.7	5.3	5.9
24 WDA1 Comp	5.6	5.7	5.4
25 TF 198	5.6	5.8	5.2
26 TF 199	5.6	5.8	5.2
27 PST-5R05	5.6	5.8	5.1
28 SCTF2	5.6	5.5	5.5
29 SCTF3	5.6	5.4	5.7
30 37-09 Bulk	5.6	6.2	5.0
31 RAD-TF48R	5.6	6.0	5.5
32 TF 224	5.6	5.6	5.5
33 Shenandoah Elite	5.5	6.2	5.2
34 RAD-TF65	5.5	5.5	5.4
35 PST-Syn-5EV9	5.5	5.7	5.5

(Continued)

Table 2. Tall fescue turf trial, 2009 (continued).

Cultivar or Selection	-----Turf Quality ¹ -----		
	2010-2012 Avg.	2010 Avg.	2011 Avg.
36 PST-5JAG-08	5.5	5.6	5.2
37 07-5 TF Bulk	5.5	6.1	5.1
38 3rd Millennium	5.5	5.3	5.2
39 5-09 TF Bulk	5.4	5.6	5.4
40 TF 195	5.4	6.2	4.7
41 RAD-TF64	5.4	5.9	5.3
42 LS-1200	5.4	5.8	5.2
43 PST-5A4S	5.4	5.5	5.3
44 PST-5DRP	5.4	5.3	5.2
45 Penn RK4	5.4	5.5	5.4
46 Wolfpack II	5.3	5.6	4.9
47 PST-Syn-5DKB	5.3	5.5	5.0
48 Dynamic II	5.3	5.3	4.9
49 Trio	5.3	5.3	5.1
50 07-9 Bulk	5.3	5.8	4.9
51 WDA2 Comp	5.2	4.6	5.6
52 Shenandoah 3	5.2	5.7	4.8
53 Falcon V	5.2	5.2	5.4
54 TF-2-07 Bulk	5.2	5.6	4.9
55 38-09 Bulk	5.2	5.5	5.4
56 IS-TF 153	5.2	6.0	4.9
57 TF 219	5.2	5.1	4.9
58 Gazelle II	5.2	5.4	5.0
59 RAD-TF50R	5.2	6.0	5.0
60 Rebel IV	5.2	5.3	4.7
61 Terrier	5.1	5.4	4.6
62 FCE3	5.1	5.7	5.0
63 Cochise IV	5.1	5.6	4.8
64 Jamboree	5.1	5.6	4.6
65 SCTF1	5.1	5.2	4.9
66 Guardian 41	5.1	5.0	4.8
67 PST-5FDR	5.0	5.2	4.7
68 Mustang 4	5.0	4.9	4.8
69 RAD-TF47R	5.0	5.2	5.0
70 SR 8650	5.0	5.1	4.5

(Continued)

Table 2. Tall fescue turf trial, 2009 (continued).

Cultivar or Selection	-----Turf Quality ¹ -----		
	2010-2012 Avg.	2010 Avg.	2011 Avg.
71 Firecracker LS	5.0	5.6	5.1
72 7-09 TF Bulk	5.0	5.6	4.7
73 ATF 1236	5.0	5.5	4.9
74 Monet	5.0	5.1	4.8
75 Bullseye	5.0	5.3	4.8
76 RAD-TF46R	5.0	5.6	5.2
77 Greenbrooks	5.0	5.1	4.7
78 Fat Cat	4.9	5.5	4.8
79 Rebel Exceda	4.9	5.3	4.5
80 Endeavor II	4.9	4.9	5.0
81 8-09 Bulk	4.9	5.1	4.6
82 J-140	4.9	5.2	4.6
83 PST-5YA	4.9	4.8	5.0
84 Guardian 21	4.9	5.2	4.6
85 Essential	4.9	5.6	4.9
86 PST-5DVD-07	4.9	4.8	4.7
87 Pedigree	4.9	5.2	4.4
88 PST-Syn-5ED	4.9	4.6	4.5
89 Justice	4.9	4.9	4.5
90 SR 8550	4.9	5.6	4.5
91 Banshee	4.8	5.1	4.6
92 1-09 TF Bulk	4.8	5.1	4.6
93 PSG 82 BPRH	4.8	5.0	4.8
94 Forte	4.8	5.2	4.4
95 PS TF 08-1	4.8	5.5	4.7
96 RAD-TF51R	4.7	5.0	4.8
97 PSG 8SP1	4.7	4.8	4.6
98 Shenandoah Sport	4.7	5.2	4.7
99 Six Point	4.7	5.2	4.3
100 PST-5BAB	4.7	4.7	4.5
101 Greystone II	4.7	4.7	4.6
102 9-09 TF Bulk	4.7	4.6	4.6
103 Rebel Advance	4.7	5.6	4.2
104 PSG 8TTST1	4.7	4.8	4.6
105 Cortez II	4.7	5.3	4.4

(Continued)

Table 2. Tall fescue turf trial, 2009 (continued).

Cultivar or Selection	-----Turf Quality ¹ -----		
	2010-2012 Avg.	2010 Avg.	2011 Avg.
106 PSG 85QR	4.7	4.8	4.4
107 Inferno	4.7	4.8	4.3
108 Speedway	4.6	4.9	4.5
109 PST-5V4	4.6	4.7	4.4
110 Sidewinder	4.6	5.3	4.3
111 4-09 TF Bulk	4.6	4.6	4.5
112 Jaguar 4G	4.6	5.2	4.1
113 Spyder LS	4.6	4.8	4.5
114 STR 86QR	4.6	5.0	4.2
115 Rocket	4.6	5.0	4.1
116 RNP	4.5	5.2	3.9
117 PST-5YMY	4.5	4.0	4.8
118 Scorpion II	4.5	4.6	4.4
119 Van Gogh	4.5	4.8	4.3
120 ATF 1327	4.5	4.5	4.0
121 ATF 1301	4.4	5.2	4.1
122 J-130	4.4	4.8	4.0
123 DaVinci	4.4	4.8	3.9
124 Tulsa Time	4.4	5.0	3.9
125 Penn 1901	4.3	5.0	4.2
126 PSG 8GRTR-4	4.3	4.8	4.0
127 Apache III	4.3	5.0	4.0
128 Signia	4.3	4.8	4.2
129 Rembrandt	4.3	4.6	4.0
130 Brockton	4.3	5.1	4.1
131 3-09 TF Bulk	4.3	4.7	4.1
132 Silverstar	4.3	4.7	4.1
133 Regiment II	4.3	4.8	4.0
134 Masterpiece	4.2	4.6	3.7
135 Crewcut II	4.2	4.5	3.9
136 PSG 8GRTR Bulk	4.2	4.4	4.2
137 TF 215	4.2	4.4	3.8
138 TF 217	4.2	4.9	3.8
139 Arid 3	4.2	4.7	4.1
140 STR 8GRQR	4.2	4.4	3.7

(Continued)

Table 2. Tall fescue turf trial, 2009 (continued).

Cultivar or Selection	-----Turf Quality ¹ -----		
	2010-2012 Avg.	2010 Avg.	2011 Avg.
141 PSG RNDR	4.2	4.5	4.0
142 PSG TTST	4.2	4.3	4.0
143 PSG TTST 2	4.2	4.6	3.7
144 Prospect	4.2	4.8	4.0
145 Grande II	4.2	4.6	4.1
146 PSG 8GRTR-1	4.2	4.4	4.0
147 PSG 8GTR-3	4.2	4.4	4.0
148 Ninja 3	4.2	4.8	4.0
149 Picasso	4.1	4.9	3.7
150 PSG 8GRTR-6	4.1	4.2	4.1
151 PSG 8GRTR-5	4.1	4.0	4.1
152 Coronado TDH	4.1	4.7	3.5
153 PSG DDMOR	4.1	4.0	3.9
154 PSG TTRH	4.1	4.1	4.0
155 Virtue II	4.1	3.9	3.8
156 Rebel Pro	4.1	4.2	3.9
157 07-4 TF Bulk	4.1	4.1	4.1
158 Tar Heel II	4.0	4.0	4.0
159 Rebel Sentry	4.0	4.7	3.5
160 2-09 Bulk	4.0	4.5	3.8
161 PSG 8GRTR-2	4.0	3.9	4.0
162 Jaguar 3	3.9	4.0	3.8
163 Greystone	3.9	4.0	3.6
164 Pixie	3.8	3.8	3.9
165 Watchdog	3.8	3.7	3.6
166 SR 8600	3.6	3.7	3.3
167 SR 8500	3.4	3.8	3.2
168 Grande	3.1	3.5	2.8
169 Tulsa II	2.8	2.6	2.6
LSD at 5% =	0.6	1.0	0.7

¹9 = best turf quality

Table 3. Performance of tall fescue cultivars and selections in a turf trial established in September 2010 at Adelphia, NJ.

Cultivar or Selection	-----Turf Quality ¹ -----			Wear Damage ² 19 July 2012	Wear Recovery ³ 17 Aug. 2012	Brown Patch/ Summer Stress ⁴ 23 Aug. 2012
	2011- 2012 Avg.	2011 Avg.	2012 Avg.			
1 WE2 Comp	6.6	6.8	6.3	5.7	6.3	5.7
2 CCR2 Comp	6.6	7.1	6.1	5.3	4.7	5.0
3 WE1 Comp	6.4	6.8	5.9	6.0	6.0	5.3
4 RZI Comp	6.3	6.8	5.8	6.3	7.0	5.0
5 Regenerate	6.2	6.5	6.0	6.3	7.0	6.7
6 RZ2 Comp	6.2	6.4	6.0	5.7	5.7	4.0
7 RAD-TF69	6.1	6.9	5.3	5.0	5.7	3.3
8 Grande 3	6.0	6.9	5.1	5.7	4.0	3.7
9 Faith	6.0	6.4	5.7	4.0	4.3	4.3
10 RAD-TF75	6.0	6.1	5.9	4.7	5.7	4.0
11 PPG-TF 106	5.9	6.2	5.6	5.0	5.7	4.3
12 RAD-TF77	5.9	5.9	6.0	5.3	5.0	5.0
13 PPG-TF 102	5.8	6.3	5.3	5.3	5.0	5.0
14 B23 Comp	5.8	6.2	5.4	5.0	4.7	4.0
15 PST-Syn-5T20	5.7	5.9	5.5	4.3	5.7	4.0
16 PPG-TF 105	5.7	6.3	5.1	4.7	4.3	4.3
17 PPG-TF 116	5.7	6.3	5.1	5.3	3.7	5.0
18 Jamboree	5.7	5.8	5.5	5.3	5.3	3.3
19 LSD Comp	5.7	6.1	5.3	5.3	4.3	4.3
20 Essential	5.6	5.8	5.4	5.7	5.7	3.0
21 Shenandoah Elite	5.6	5.8	5.4	4.3	4.3	3.3
22 TPC Comp	5.6	5.8	5.4	6.3	5.7	5.3
23 RAD-TF74	5.6	5.9	5.2	4.3	4.3	3.0
24 PST-Syn-5BPO	5.5	5.8	5.1	4.0	6.0	5.3
25 SCTF 5	5.5	5.6	5.4	4.3	4.3	4.3
26 Wolfpack II	5.5	6.0	5.0	5.3	5.0	3.3
27 SCTF 4	5.5	5.8	5.1	3.7	6.3	4.3
28 Finelawn Xpress	5.4	6.0	4.9	5.0	5.0	4.0
29 Penn RK4	5.4	5.4	5.5	4.7	5.0	4.3
30 SCTF 3	5.4	6.0	4.7	5.3	3.7	4.0
31 Falcon V	5.4	6.0	4.8	4.3	4.0	3.3
32 RAD-TF76	5.4	5.5	5.2	4.3	6.0	3.7
33 PPG-TF 117	5.3	5.5	5.2	4.7	5.3	4.7
34 PPG-TF 115	5.3	5.5	5.1	4.7	4.7	4.0
35 SCTF 1	5.3	5.8	4.8	5.3	5.3	4.0

(Continued)

Table 3. Tall fescue turf trial, 2010 (continued).

Cultivar or Selection	-----Turf Quality ¹ -----			Wear Damage ² 19 July 2012	Wear Recovery ³ 17 Aug. 2012	Brown Patch/ Summer Stress ⁴ 23 Aug. 2012
	2011- 2012 Avg.	2011 Avg.	2012 Avg.			
36 FSD Comp	5.3	5.6	5.0	5.7	5.0	3.0
37 13-10 FC Bulk	5.3	5.8	4.8	5.7	3.3	3.0
38 Fat Cat	5.3	5.6	4.9	4.0	4.7	2.7
39 10-10 FC-8	5.3	5.5	5.0	4.7	4.3	3.7
40 PST-Syn-5RTY	5.3	5.2	5.3	5.3	6.3	5.3
41 7-10 FC-5	5.2	5.6	4.8	4.7	3.3	3.3
42 9-10 FC-1	5.2	5.4	5.0	5.0	3.3	4.0
43 SCTF 6	5.2	5.3	5.1	4.7	5.3	4.7
44 Van Gogh	5.2	5.5	4.9	5.7	4.0	3.3
45 Mustang 4	5.2	5.7	4.7	5.7	4.3	3.7
46 Rhambler SRP	5.2	5.6	4.8	5.7	3.7	4.0
47 Monet	5.2	5.1	5.2	5.7	5.3	4.3
48 Greenbrooks	5.2	5.4	4.9	4.7	4.0	2.7
49 Terrier	5.2	5.5	4.8	4.3	4.3	2.7
50 Garrison	5.2	5.5	4.8	4.7	3.7	3.0
51 Traverse SRP	5.2	5.8	4.6	4.0	3.3	2.7
52 7-10 FC-6	5.2	5.2	5.1	5.7	3.7	3.3
53 1-10 Fa Bulk	5.1	5.4	4.9	3.7	3.0	3.0
54 GSD Comp	5.1	5.5	4.8	4.7	5.0	2.7
55 SR 8650	5.1	5.3	4.9	5.0	4.3	3.7
56 10-10 FC-5	5.1	5.4	4.8	5.0	4.7	4.0
57 Tonto	5.1	5.4	4.7	4.0	4.7	2.7
58 Rebel Xtreme	5.1	5.6	4.6	3.0	5.0	5.0
59 Shenandoah III	5.1	5.4	4.7	2.7	4.3	3.7
60 Firenze	5.0	5.7	4.4	5.0	3.3	3.3
61 Speedway	5.0	5.2	4.8	5.7	6.0	2.7
62 PST-Syn-5CAM	5.0	5.2	4.8	4.0	5.0	4.3
63 PPG-TF 101	5.0	5.4	4.5	4.3	3.3	4.0
64 Millennium SRP	5.0	5.8	4.2	4.3	2.7	2.7
65 Rocket	4.9	5.2	4.7	3.7	4.0	2.3
66 10-10 FC-1	4.9	5.1	4.7	4.7	5.0	2.7
67 Braveheart	4.9	5.3	4.5	4.0	3.7	3.7
68 10-10 FC-7	4.9	5.0	4.7	5.7	4.0	3.0
69 Justice	4.8	5.0	4.7	4.7	5.0	4.0
70 2-10 Fa Bulk	4.8	5.0	4.6	3.7	4.0	3.3

(Continued)

Table 3. Tall fescue turf trial, 2010 (continued).

Cultivar or Selection	-----Turf Quality ¹ -----			Wear Damage ² 19 July 2012	Wear Recovery ³ 17 Aug. 2012	Brown Patch/ Summer Stress ⁴ 23 Aug. 2012
	2011- 2012 Avg.	2011 Avg.	2012 Avg.			
71 DaVinci	4.8	5.4	4.2	4.0	4.3	2.7
72 10-10 Bulk	4.8	4.9	4.6	3.7	3.7	2.7
73 10-10 FC-3	4.8	5.3	4.2	3.7	3.7	3.3
74 9-10 FC-3	4.8	4.8	4.7	3.7	3.0	3.0
75 Gazelle II	4.7	4.9	4.6	5.7	4.0	4.0
76 7-10 FC-4	4.7	4.8	4.6	3.3	4.3	3.3
77 7-10 FC-7	4.7	4.9	4.6	3.3	4.7	3.0
78 Dynamic II	4.7	4.9	4.5	4.0	4.7	3.7
79 Pedigree	4.7	5.3	4.1	5.0	4.3	3.3
80 3-10 Fa Bulk	4.7	4.9	4.5	5.3	4.3	2.7
81 10-10 FC-6	4.7	4.8	4.6	4.0	4.0	3.0
82 Endeavor II	4.7	4.7	4.7	5.3	5.7	4.7
83 10-10 FC-2	4.7	4.9	4.4	3.3	4.0	2.0
84 Cayenne	4.7	5.2	4.1	3.3	4.3	2.7
85 7-10 FC-3	4.7	5.0	4.3	4.3	3.3	2.0
86 Banshee	4.7	4.7	4.6	4.0	3.7	2.7
87 Umbrella	4.7	5.4	3.9	3.0	2.3	2.3
88 Dynamic II	4.6	4.8	4.5	4.0	4.0	3.3
89 FCE3	4.6	5.0	4.3	4.0	4.3	3.0
90 Virtue II	4.6	4.8	4.4	3.3	4.0	4.3
91 RNP	4.6	4.8	4.4	3.3	2.3	3.3
92 Cannavaro	4.6	5.0	4.2	3.0	2.7	2.0
93 10-10 FC-4	4.6	5.0	4.2	4.0	3.7	2.7
94 Falcon IV	4.6	4.9	4.3	4.7	4.7	3.0
95 Six Point	4.6	5.0	4.2	4.7	4.3	3.3
96 CE-1	4.6	4.8	4.3	4.7	5.0	2.3
97 IRN2 Comp	4.6	5.0	4.2	4.3	4.0	3.0
98 Rebel IV	4.5	4.7	4.3	3.7	3.3	3.7
99 5-10 Fa Bulk	4.5	5.0	4.1	2.7	4.7	3.0
100 Rebel Exeda	4.5	4.6	4.4	4.7	3.0	3.7
101 PST-Syn-5SDS	4.5	4.8	4.2	3.0	4.7	4.7
102 Renegade Supreme	4.5	4.6	4.4	3.7	2.7	3.0
103 Inferno	4.5	4.7	4.3	3.0	4.3	3.3
104 ATF 1327	4.5	4.6	4.4	5.7	4.7	3.7
105 7-10 FC-2	4.5	5.2	3.8	2.7	2.7	3.0

(Continued)

Table 3. Tall fescue turf trial, 2010 (continued).

Cultivar or Selection	-----Turf Quality ¹ -----			Wear Damage ² 19 July 2012	Wear Recovery ³ 17 Aug. 2012	Brown Patch/ Summer Stress ⁴ 23 Aug. 2012
	2011- 2012 Avg.	2011 Avg.	2012 Avg.			
106 9-10 FC Bulk	4.5	4.6	4.4	4.7	4.3	2.7
107 Forte	4.4	4.7	4.2	3.0	4.0	3.3
108 Greystone II	4.4	4.3	4.5	4.0	5.3	3.7
109 Rebel Advance	4.4	4.9	3.9	4.0	4.0	4.0
110 ATF-1334	4.4	4.8	4.0	4.0	4.3	2.7
111 Coranado TDH	4.4	4.6	4.2	3.3	5.3	3.3
112 Dorado	4.4	4.8	4.0	3.0	2.0	3.7
113 IRN1 Comp	4.4	4.7	4.1	4.0	4.0	2.0
114 Rembrandt	4.3	4.4	4.2	3.7	4.7	4.3
115 Stingray	4.3	4.5	4.1	3.7	3.7	4.0
116 Tar Heel II	4.3	4.5	4.1	3.3	4.7	3.7
117 Scorpion II	4.3	4.7	3.9	3.3	4.3	3.0
118 Shenandoah Sport	4.3	4.3	4.2	4.3	4.3	3.0
119 7-10 FC Bulk	4.3	4.7	3.8	3.0	3.3	3.3
120 7-10 FC-1	4.2	4.6	3.9	2.7	3.3	3.0
121 9-10 FC-8	4.2	4.6	3.9	5.0	2.3	2.3
122 IRB2 Comp	4.2	4.5	3.9	4.3	4.0	3.0
123 N-96	4.2	4.4	4.0	3.0	3.7	2.7
124 PSG 8G16-43	4.2	4.2	4.2	4.0	3.0	3.0
125 Cezanne RZ	4.2	4.3	4.1	4.7	4.3	3.3
126 Greystone	4.2	4.1	4.3	4.0	5.0	3.3
127 Jaguar 4G	4.2	4.4	3.9	3.3	3.0	2.7
128 Greenkeeper	4.2	4.4	3.9	4.0	3.3	3.0
129 9-10 FC-6	4.2	4.5	3.8	4.0	4.0	2.0
130 Signia	4.1	4.4	3.9	4.7	3.0	3.3
131 Rebel Sentry	4.1	4.5	3.8	3.7	3.0	2.7
132 SCTF 2	4.1	4.1	4.1	4.0	5.7	3.0
133 Dakota	4.1	4.1	4.1	3.3	3.0	3.0
134 Montana	4.1	4.4	3.8	4.0	4.0	2.0
135 Picasso	4.1	4.1	4.0	4.0	4.3	4.0
136 2nd Millennium	4.1	4.1	4.0	4.7	4.0	2.7
137 Penn 1901	4.1	4.7	3.4	3.7	3.0	3.0
138 IRB1 Comp	4.0	4.2	3.8	4.3	4.0	3.0
139 Rebel Pro	4.0	4.1	3.9	3.3	3.3	3.0
140 SR 8600	4.0	4.4	3.5	2.0	4.7	2.3

(Continued)

Table 3. Tall fescue turf trial, 2010 (continued).

Cultivar or Selection	-----Turf Quality ¹ -----			Wear Damage ² 19 July 2012	Wear Recovery ³ 17 Aug. 2012	Brown Patch/ Summer Stress ⁴ 23 Aug. 2012
	2011- 2012 Avg.	2011 Avg.	2012 Avg.			
141 Arid 3	4.0	4.2	3.7	3.7	4.3	3.3
142 Masterpiece	3.9	4.1	3.8	3.7	4.0	3.0
143 Millennium	3.9	4.0	3.8	4.0	3.7	2.7
144 Brockton	3.8	4.1	3.6	2.3	3.3	2.7
145 9-10 FC-5	3.8	4.1	3.6	3.0	4.3	2.3
146 Pixie	3.7	4.0	3.4	2.7	5.0	3.3
147 Prospect	3.7	3.8	3.6	3.0	4.0	3.0
148 K-31	1.2	1.1	1.2	1.0	4.7	2.0
149 Atlas	1.1	1.0	1.1	1.0	3.7	2.0
LSD at 5% =	0.6	0.8	0.8	1.7	2.0	1.5

¹9 = best turf quality

²9 = best wear quality

³9 = highest wear recovery

⁴9 = least disease or stress

Table 4. Performance of tall fescue cultivars and selections in a turf trial seeded in September 2011 at Adelphia, NJ.

Cultivar or Selection	Turf Quality ¹ 2012 Avg.	Establishment ² Oct. 2011	Brown Patch ³ Aug. 2012
1 PPG-TF 141	7.1	5.0	7.3
2 W43 COMP	6.8	5.3	7.7
3 Falcon V	6.8	5.3	7.7
4 U41 COMP	6.8	4.7	7.3
5 U44 COMP	6.8	4.7	7.3
6 B23-11	6.8	6.0	7.0
7 WE1 COMP	6.7	5.0	6.0
8 PPG-TF 142	6.7	4.3	6.3
9 PPG-TF 105	6.7	5.3	6.3
10 U45 COMP	6.7	3.3	6.7
11 CCR2 COMP	6.6	4.7	8.0
12 PPG-TF 145	6.6	4.7	5.7
13 PPG-TF 138	6.6	4.7	6.3
14 Penn RK4	6.6	4.3	6.0
15 PPG-TF 139	6.6	5.7	7.0
16 MET4 COMP	6.5	4.7	7.0
17 PPG-TF 140	6.5	5.3	6.0
18 W45 COMP	6.5	4.0	6.3
19 WE2 COMP	6.5	4.7	6.7
20 Regenerate	6.5	6.3	7.7
21 SC-1	6.5	5.0	6.7
22 MET3 COMP	6.4	5.7	7.3
23 PPG-TF 143	6.4	5.3	7.3
24 PPG-TF 116	6.4	6.0	7.0
25 PST-Syn-R5D0	6.4	4.0	7.3
26 PST-5AWT-08	6.4	4.7	7.0
27 PPG-TF 121	6.4	5.7	7.0
28 U43 COMP	6.3	5.0	6.7
29 Firecracker LS	6.3	4.7	6.7
30 TPC-11	6.3	5.3	6.7
31 3611 R2	6.3	5.7	6.0
32 Shenandoah Elite	6.3	5.3	6.7
33 RZ2 COMP	6.3	5.0	7.0
34 MET2 COMP	6.3	5.3	6.7
35 PPG-TF 106	6.3	5.3	6.0

(Continued)

Table 4. Tall fescue turf trial, 2011 (continued).

Cultivar or Selection	Turf Quality ¹ 2012 Avg.	Establishment ² Oct. 2011	Brown Patch ³ Aug. 2012
36 ZW44 Comp	6.2	4.3	6.7
37 Golconda	6.2	7.0	5.3
38 Grande 3	6.2	6.3	7.7
39 ATF-1521	6.2	5.0	5.0
40 MET5 COMP	6.2	5.0	7.0
41 PST-5MCD	6.2	5.3	5.7
42 ATF 1740	6.2	6.0	5.7
43 PST-5A4S	6.2	5.0	7.0
44 PPG-TF 123	6.2	5.3	6.0
45 PPG-TF 144	6.2	5.7	7.3
46 Shenandoah III	6.2	4.7	6.0
47 MET1 COMP	6.1	5.7	7.3
48 MET6 COMP	6.1	5.0	7.0
49 PST-5SXR	6.1	5.3	4.3
50 2-11 TF PC	6.1	4.7	6.7
51 3611 R6	6.1	4.0	5.0
52 ATF 1703	6.1	6.0	7.7
53 Dorado	6.1	7.0	6.0
54 LSD-11	6.1	5.3	6.3
55 Spyder	6.1	5.3	6.7
56 PST-5FDR	6.1	5.0	5.0
57 PPG-TF 102	6.1	5.7	5.7
58 Finelawn Express	6.0	5.7	6.7
59 Rebel Xtreme	6.0	5.7	7.7
60 PST-Syn-5ONC	6.0	4.3	6.7
61 PSG 8SP2	6.0	5.7	6.0
62 Fesnova	6.0	4.7	7.0
63 ATF 1734	5.9	5.0	6.7
64 ATF 1736	5.9	5.0	7.3
65 RZ1 COMP	5.9	5.3	7.3
66 Van Gogh	5.9	5.0	7.0
67 ATF-1257	5.9	6.0	5.0
68 ATF 1707	5.9	6.0	6.0
69 MNTF-DW-11	5.9	4.3	6.0
70 5911 R10	5.9	5.7	6.3

(Continued)

Table 4. Tall fescue turf trial, 2011 (continued).

Cultivar or Selection	Turf Quality ¹ 2012 Avg.	Establishment ² Oct. 2011	Brown Patch ³ Aug. 2012
71 3611 R5	5.9	5.0	4.7
72 ATF 1701	5.8	5.0	5.7
73 PSG 8BP2	5.8	5.0	6.3
74 6011 R1	5.8	4.7	5.0
75 FCE 3	5.8	4.7	5.3
76 ATF 1702	5.8	5.7	6.3
77 ATF 1738	5.8	4.7	6.0
78 PPG-TF 122	5.8	6.0	7.0
79 5911 R11	5.8	4.7	5.7
80 3611 R3	5.8	5.0	6.0
81 ATF 1732	5.7	4.7	5.7
82 ATF 1735	5.7	4.3	5.3
83 PST-5R05	5.7	4.7	6.0
84 PSG 6008	5.7	4.7	6.0
85 5911 R5	5.7	4.7	5.0
86 3611 R4	5.7	5.7	5.3
87 IS-IF-154	5.7	5.0	5.3
88 ATF 1739	5.7	5.3	5.3
89 PST-5MVD	5.7	4.0	6.3
90 PST-Syn-5MBP	5.7	5.0	7.3
91 PST-Syn-5NGE	5.7	5.0	5.0
92 6011 Bulk	5.7	5.0	4.7
93 Mustang 4	5.7	4.7	6.0
94 Crossfire 3	5.7	5.3	4.7
95 5911 R13	5.7	5.0	4.3
96 Rebel IV	5.6	5.3	6.0
97 ATF 1731	5.6	5.0	7.0
98 ATF 1737	5.6	5.0	6.0
99 PST-5GRB	5.6	4.3	5.7
100 Gazelle II	5.6	5.7	5.0
101 5911 R8	5.6	4.7	5.3
102 6011 R6	5.6	4.3	4.3
103 ATF 1706	5.6	6.0	5.7
104 PPG-TF 115	5.6	4.7	6.3
105 SR 8550	5.6	2.0	6.7

(Continued)

Table 4. Tall fescue turf trial, 2011 (continued).

Cultivar or Selection	Turf Quality ¹ 2012 Avg.	Establishment ² Oct. 2011	Brown Patch ³ Aug. 2012
106 PSG TF 08-6	5.6	4.7	4.3
107 3611 R1	5.6	5.0	5.0
108 6011 R3	5.6	4.7	6.3
109 PSM-6351	5.6	5.3	5.3
110 Rebel Advance	5.5	5.0	7.0
111 PST-Syn-5END	5.5	4.7	4.7
112 ATF-1533	5.5	6.3	6.0
113 Dynamic II	5.5	5.0	6.3
114 PST-5SXD	5.5	4.3	5.7
115 Tulsa Time	5.5	5.7	4.7
116 5911 R3	5.5	5.3	5.0
117 3611 Bulk	5.5	4.7	5.7
118 ATF 1705	5.5	5.3	4.3
119 PSG 8GF7	5.5	5.3	4.7
120 6011 R7	5.5	5.3	5.3
121 Rhambler SRP	5.5	4.7	5.3
122 Rebel Exeda	5.4	4.3	6.3
123 ATF 1729	5.4	4.3	6.0
124 ATF 1733	5.4	5.7	6.0
125 Monet	5.4	5.7	5.3
126 Tonto	5.4	6.7	4.3
127 PST-5BRK	5.4	5.7	6.3
128 GSD	5.4	6.0	7.0
129 3311 R8	5.4	5.0	4.7
130 ATF 1704	5.4	5.3	7.0
131 OST-Syn-5E11	5.4	4.7	6.3
132 PPG-TF 101	5.4	4.7	6.3
133 SR 8650	5.4	6.3	5.7
134 STR 8GRQR	5.4	4.3	5.7
135 PST-5SDT Bulk	5.3	4.7	6.0
136 3-11 TF PC	5.3	5.7	3.3
137 JT-158	5.3	5.0	3.7
138 Inferno	5.3	5.3	4.7
139 PST-5DKB-N	5.3	4.7	4.3
140 PST-Syn-R5HH	5.3	4.3	5.7

(Continued)

Table 4. Tall fescue turf trial, 2011 (continued).

Cultivar or Selection	Turf Quality ¹ 2012 Avg.	Establishment ² Oct. 2011	Brown Patch ³ Aug. 2012
141 5911 R4	5.3	4.7	5.3
142 ATF-1255	5.3	5.3	6.3
143 Justice	5.3	5.0	6.3
144 WDA23 COMP	5.3	4.3	6.0
145 PSG 8GF8	5.3	4.7	3.3
146 5911 Bulk	5.3	5.0	6.0
147 ATF 1728	5.2	5.0	4.7
148 PST-5DRP	5.2	4.3	6.0
149 PSG 85QR	5.2	5.0	5.0
150 5911 R7	5.2	5.3	5.0
151 FSD COMP	5.2	5.0	6.0
152 PSG 8TST4	5.2	6.0	5.7
153 6011 R4	5.2	5.0	6.3
154 STR 86GRH	5.2	4.3	4.3
155 PSG 8SP1	5.2	4.3	6.3
156 PST-Syn-5MINI	5.2	3.7	7.0
157 PST-5DVD	5.2	3.0	6.3
158 PST-5LIV	5.2	5.0	5.0
159 PSG 8NJMD	5.2	2.3	6.7
160 Shenandoah Sport	5.2	3.3	5.3
161 ATF 1708	5.1	5.0	5.7
162 Terrano	5.1	5.3	5.7
163 Speedway	5.1	4.7	6.3
164 ATF 1709	5.1	4.7	4.3
165 PST-5SDS	5.1	3.7	6.7
166 PSG 85P1	5.1	4.7	5.3
167 3311 R6	5.1	5.0	4.3
168 PST-Syn-525D	5.1	5.0	4.0
169 3311 R10	5.1	4.3	3.7
170 3311 R4	5.1	4.3	5.7
171 Renegade Supreme	5.1	6.7	5.3
172 Cezanne RZ	5.0	5.0	4.7
173 Lexington	5.0	5.0	5.3
174 Regiment II	5.0	5.0	5.3
175 STR 8BB5	5.0	4.3	5.3

(Continued)

Table 4. Tall fescue turf trial, 2011 (continued).

Cultivar or Selection	Turf Quality ¹ 2012 Avg.	Establishment ² Oct. 2011	Brown Patch ³ Aug. 2012
176 9-11 TF PC	5.0	5.3	4.7
177 Tarnation GT	5.0	4.7	4.7
178 STR 86QR	5.0	3.7	4.7
179 3311 Bulk	5.0	4.7	4.3
180 PST-5V4	5.0	4.3	7.3
181 PST-5R20	5.0	4.7	5.7
182 PSG RNDR	5.0	3.0	4.7
183 3311 R10	5.0	4.3	5.7
184 Brockton	4.9	4.3	5.3
185 PST-Syn-5C20	4.9	4.0	5.3
186 3311 R5	4.9	5.0	4.7
187 ATF-1252	4.9	5.3	4.0
188 Rebel XLR	4.9	6.0	5.0
189 Faith	4.9	6.0	5.0
190 PST-Syn-5FAW	4.9	5.0	6.3
191 PST-R5NW Bulk	4.9	4.7	5.3
192 PSG 8G1643	4.9	4.7	3.7
193 Titanium LS	4.9	6.0	6.3
194 Prospect	4.9	3.7	5.7
195 Greystone II	4.9	6.0	4.0
196 WDA1 COMP	4.9	3.0	5.7
197 PST-5BGR	4.9	5.3	6.0
198 Endeavor II	4.9	6.3	4.7
199 Six Point	4.9	5.0	5.7
200 Grande II	4.8	6.0	4.7
201 PSG 8308	4.8	4.3	3.3
202 Rembrandt	4.8	6.3	4.7
203 PST-Syn-5COY	4.8	4.3	6.0
204 PSG 8TTS1OW	4.8	4.7	6.0
205 PSG 8NJMT	4.8	2.3	5.3
206 PSG 8GF4	4.8	5.0	3.3
207 PST-R5W3	4.7	5.0	6.7
208 PSG 8GF3	4.7	5.0	3.3
209 PSG 8GF5	4.7	4.0	3.3
210 PSG 8GF6	4.7	4.3	3.3

(Continued)

Table 4. Tall fescue turf trial, 2011 (continued).

Cultivar or Selection	Turf Quality ¹ 2012 Avg.	Establishment ² Oct. 2011	Brown Patch ³ Aug. 2012
211 Cayenne	4.7	5.0	5.0
212 Virtue II	4.7	3.3	7.0
213 ATF 1730	4.7	5.0	4.3
214 PST-Syn-5EXT	4.7	4.3	7.3
215 3311 R2	4.7	4.3	4.0
216 Scorpion II	4.6	3.7	4.7
217 Davinci	4.6	5.7	4.7
218 PST-5SIS	4.6	4.7	6.3
219 Montana	4.6	7.7	5.0
220 Tar Heel II	4.6	5.7	6.3
221 PSG 8GF2	4.6	4.7	3.3
222 Greystone	4.5	4.3	4.7
223 PSG TTST	4.5	4.7	4.7
224 Quest	4.5	4.7	5.7
225 Jaguar 4G	4.5	5.0	5.0
226 Masterpiece	4.5	5.0	6.0
227 Guardian	4.5	2.3	6.3
228 PSG 8GRTJ	4.5	5.0	3.3
229 Picasso	4.4	5.3	4.7
230 Crewcut II	4.4	4.3	4.0
231 PSG 8GF1	4.4	4.7	3.3
232 Greenkeeper	4.4	6.0	5.3
233 PSG TTRH	4.4	3.0	4.7
234 PST-Syn-5NCW	4.4	5.0	4.7
235 Arid 3	4.3	5.3	4.3
236 PST-5YMY	4.2	5.0	6.7
237 Coronado THD	4.1	4.0	5.0
238 PST-Syn-5W1	4.1	5.0	5.0
239 PST-5YA	4.0	5.3	5.7
240 Watchdog	3.4	1.3	4.3
241 Grande	2.8	2.3	4.3
242 PSG 8RSTR3	1.9	5.3	4.7
243 Teton	1.6	8.0	5.3

(Continued)

Table 4. Tall fescue turf trial, 2011 (continued).

Cultivar or Selection	Turf Quality ¹ 2012 Avg.	Establishment ² Oct. 2011	Brown Patch ³ Aug. 2012
LSD at 5% =	0.8	1.0	1.7

¹9 = best turf quality

²9 = earliest establishment

³9 = least disease

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

	2008		2009		2010		2011	
	N ¹	Ht ²	N	Ht	N	Ht	N	Ht
Table 1 (2008).....	3.50	1.5	2.25	1.5	2.25	1.5	2.25	1.5
Table 2 (2009).....			3.00	1.5	3.00	1.5	3.00	1.5
Table 3 (2010).....					3.00	1.5	3.00	1.5
Table 4 (2011).....							3.50	1.5

¹Annual N applied (lb/1000 ft²)

²Mowing height in inches