

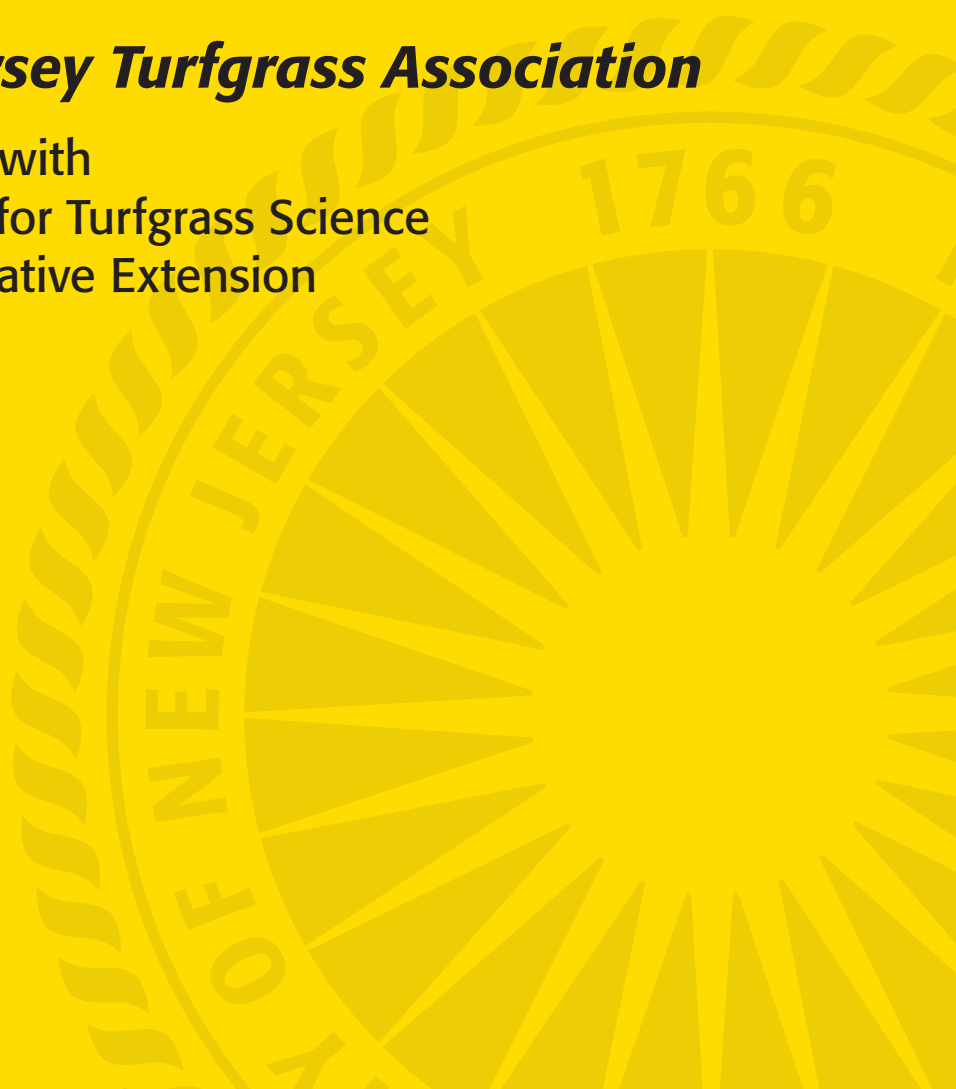
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The Rutgers Turfgrass Proceedings is published yearly by the Rutgers Center for Turfgrass Science, Rutgers Cooperative Extension, and the New Jersey Agricultural Experiment Station, School of Environmental and Biological Sciences, Rutgers, The State 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 2009 New Jersey Turfgrass Expo. Publication of these lectures provides a readily avail-

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

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

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

RESPONSE OF TALL FESCUE TO WEAR STRESS IN 2009

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and Joseph B. Clark¹

Intense use of sports fields and other recreational sites presents a challenge to turfgrass managers responsible for maintaining persistent, uniform and safe natural playing surfaces. Traffic stress tolerant cultivars of Kentucky bluegrass (*Poa pratensis* L.), tall fescue (*Festuca arundinacea* Schreb.), perennial ryegrass (*Lolium perenne* L.) or mixtures of these species can help sports field managers maximize the safety and playability of sports fields.

Juska et al. (1969) found that tall fescue was well adapted to the transition zone and is suited to large, expansive lawn areas and parks where a uniform wear-resistant cover is important. However, its coarse leaf texture, formation of turfgrass stands with very low shoot density, and inability to blend well with other commonly used cool-season turfgrasses were attributes that led turfgrass managers to establish other turfgrasses in areas where a high quality turf was desired (Beard, 1973). Since the release of the cultivar Rebel in 1979 (Funk et al., 1981), turfgrass breeders have continued to improve the turfgrass quality of tall fescue by producing cultivars with a darker color, finer leaf texture, lower growth habit, denser turf canopy, and increased resistance to disease. The result is that new tall fescue cultivars can now be used for lawns, parks, and sports fields without compromising turfgrass quality (Bokmeyer et al., 2008).

Traffic is the most frequent and damaging stress to turfgrasses used as a sports turf (Minner et al., 1993). Traffic is characterized by the individual stresses of wear, soil compaction, divoting, and soil displacement (Beard, 1973). Wear injury affects aboveground plant parts and is defined as the immediate result of crushing, tearing and shearing actions of foot and vehicular traffic; soil compaction can produce chronic stresses associated with

increased soil bulk density, loss of soil structure, and reduced aeration, water infiltration, and water storage (Beard et al. 1974; Shearman, 1988). Carrow (1980) reported that percent tall fescue cover declined with increasing compaction and that the relative compaction tolerance of three turfgrass species was perennial ryegrass (*Lolium perenne* L.) = Kentucky bluegrass > tall fescue. Soil displacement and divoting can often contribute to a decline in the quality of sports field surfaces; however these stresses have not typically been assessed in research.

Traffic stress simulators have been developed to mimic the effects of trampling, which imparts wear and compaction of soil, while others, such as the machines described by Shearman et al. (1974), Bonos and coworkers (2001), and the GA W device described by Shearman et al. (2001) were developed to impart only wear stress.

There is a limited amount of information available regarding the traffic (wear and compaction) tolerance of newer tall fescue cultivars. Park et al. (2004) identified numerous cultivars and selections comprising the 2001 NTEP Tall Fescue Test that had improved tolerance to simulated wear and compaction applied in 2002 and 2003. Additionally, the 2001 NTEP tall fescue test was assessed under traffic stresses using a traffic simulator described by Cockerham and Brinkman (1989) in Michigan (Bughrara, 2007). Recently, Park et al. (2009a) identified wear tolerant entries comprising the 2005 Cooperative Turfgrass Breeder's Test (<http://www.ctbt-us.info/>) Tall Fescue Trial and the 2006 NTEP (National Turfgrass Evaluation Program) Tall Fescue Test. Furthermore, Park et al. (2008 and 2009b) reported on the fall and summer traffic tolerance of tall fescue cultivars and selections comprising the 2006 NTEP Tall Fescue Test.

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Tall fescue cultivar recommendations are needed for sports fields that receive play at a specific time of the year (spring, summer, or fall). The objective of this study was to assess the responses of tall fescue to traffic stress applied during spring and fall 2009.

MATERIALS AND METHODS

Evaluation Trial

The 113 entries of the 2006 NTEP tall fescue trial as well as CE-2, CE-4, BBM, Titanium, and ATE were established in September 2006 on a well-drained loam (sand = 33%; silt = 41%; clay = 26%) at the Horticultural Research Farm II in North Brunswick, NJ. Plots (6.0 ft x 5.0 ft) were evaluated for tolerance to and recovery from traffic applications in April (spring) and October (fall) 2009. Traffic was previously applied to this trial in October (fall) 2007 (Park et al., 2008) and July (summer) 2008 (Park et al., 2009b). The experimental design was a randomized complete block design with three replications.

Soil test results from August 2009 indicated that the soil pH was 6.2; soil phosphorous (P) and potassium (K) were 86 and 365 lb/acre, respectively. The test was mowed 1 to 2 times a week with a rotary mower at a height of 2.75-inch. The test was irrigated as necessary to avoid severe drought stress. Annual nitrogen (N) applications for 2009 totaled 2.4 lb/1000 ft².

Traffic Simulation

Both wear and compaction stresses (traffic) were applied to the trial. Wear was applied using a modified version of the M24C5A Sweepster described by Bonos et al. (2001). The simulator was operated at a ground speed of 2.5 miles per hour (mph) and 250 rpm for the paddles. In April (spring) 2009, a total of 24 passes of the wear simulator were applied over three days (4 passes on 28 April; 12 passes on 29 April; and 8 passes on 30 April 2009) to one-half of each plot. In October (fall) 2009, 24 passes were applied over two days (8 passes on 13 October and 16 passes on 14 October 2009). Every other pass was made in the opposing direction of the previous pass and was made on the same one-half of each

plot that received traffic in October 2007 and July 2008.

Ten passes of a vibratory pavement roller (operating weight = 2586-lb; centrifugal force with vibratory function engaged = 3000-lb) were applied on 6 May 2009 (after spring wear) and 20 October 2009 (after fall wear) to compact the soil over the same portion of the plots that wear was applied. Similar to wear application, every other pass was made in the opposing direction of the previous pass.

Plot Evaluation

The non-trafficked one-half portion of each plot was 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 freedom from insect and/or disease damage). Spring green-up and susceptibility to brown patch (caused by *Rhizoctonia solani* Kühn) were also rated as separate characteristics in 2009. A 1 to 9 scale was utilized for these ratings where 9 equaled the best turf characteristic.

Tall fescue tolerance to wear and compaction stresses during spring 2009 was assessed by taking visual ratings of fullness of turfgrass canopy (FTC) using a 0 to 100% scale where 0% equaled absence of a turfgrass canopy and 100% equaled a full canopy. Ratings were taken before wear applications (27 April 2009), after 24 passes of the wear simulator (30 April 2009), and 6 days after wear (DAW). Turfgrass quality under wear stress was also assessed on 30 April 2009 using a 1 to 9 scale (9 = most dense, uniform turfgrass canopy after wear). Following compaction application, FTC was assessed 9 and 50 DAC (days after compaction). Turfgrass quality under traffic stress was evaluated 9 DAC using a 1 to 9 scale.

To assess tall fescue tolerance to wear and compaction stresses during fall 2009, FTC was assessed prior to wear (13 October 2009), after 24 passes of the wear simulator (15 October 2009), and 5 DAW. Turfgrass quality under wear stress was visually evaluated on 15 October 2009 using a 1 to 9 scale. Turfgrass quality under traffic stress and FTC were evaluated 9 DAC. All data were subjected to analysis of variance and means were separated using the Fisher's protected least significant difference (LSD) test at $p < 0.05$.

RESULTS AND DISCUSSION

Non-trafficked Portion of Plots

Tall fescue cultivars and selections that had the greatest average turfgrass quality (2007-2009 average) were Bullseye, Cochise IV (RKCL), Wolfpack II (PST-5WMB), Falcon V (ATM), Turbo, Catelyst (NA-BT-1), RK 5, Mustang 4 (M4), Firecracker LS (MVS-MST), Greenbrooks (TG 50-9460), Cannavaro (DP 50-9440), and Monet (LTP-610 CL) (Table 1).

Kentucky 31 had the poorest average turfgrass quality during 2007-2009 (Table 1). Other poor quality cultivars and selections during 2007-2009 were PSG-TTST, Plato, Aristotle, and Silverado (Table 1).

Entries with the best spring green-up on 19 April 2009 were Kentucky 31, Silverado, GO-1BFD, Falcon NG (CE 1), CE-2, Rembrandt (Table 1). Entries with the poorest spring green-up on 19 April 2009 were Terrier (IS-TF-135), Raptor II (MVS-TF-158), IS-TF-159, Sidewinder (IS-TF-138), Toccoa (IS-TF-151), and Trio (IS-TF-152) (Table 1).

Entries with the least brown patch on 25 August 2009 were Bullseye, Traverse SPR (RK-1), BGR-TF2, SC-1, SR 8650 (STR-8LMM), Falcon NG (CE 1), Catelyst (NA-BT-1), Van Gogh (LTP-RK2), BBM, Aggressor (IS-TF-153), 3rd Millennium SRP, GO-1BFD, Firenze, Cochise IV (RKCL), Mustang 4 (M4), Wolfpack II (PST-5WMB), Speedway (STR-8BPD), Spyder LS (Z-2000), Greenbrooks (TG 50-9460), Reunion (LS-03), Gazelle II (PST-5HP), Sidewinder (IS-TF-138), Finelawn Xpress (RP 2), Monet (LTP-610 CL), Titanium LS (MVS-BB-1), J-140, Pedigree (ATF-1199), Falcon IV, Hemi, PSG-TTST, RK 5, Justice, Talladega (RP 3), IS-TF-159, Renovate (LS-11), MVS-1107, 06-DUST, Faith (K06-WA), Shenandoah Elite (RK 6), Rocket (IS-TF-147), Essential (IS-TF-154), Tulsa Time (Tulsa III), Jamboree (IS-TF-128), Falcon V (ATM), RK 4, Firecracker LS (MVS-MST), Biltmore, Rebel IV, PSG-RNDR, and PSG-TTRH (Table 1).

Traffic Response in Spring 2009

Entries with the highest FTC on 15 May 2009 (9 DAC) and best quality under traffic stress were Falcon V (ATM), SC-1, Essential (IS-TF-154), Shenandoah III (SH 3), Falcon NG (CE 1), Traverse SPR (RK-1), Greenbrooks (TG 50-9460), Bullseye, Co-

chise IV (RKCL), Hemi, Firecracker LS (MVS-MST), RK 4, Cannavaro (DP 50-9440), and Catelyst (NA-BT-1) (Table 2).

Entries with the lowest FTC on 15 May 2009 (9 DAC) and poorest turfgrass quality under traffic stress were AST 7001, ATF 1328, Aristotle, Hudson (DKS), Umbrella (DP 50-9411), and Kentucky 31 (Table 2).

Recovery assessment on 25 June 2009 (50 DAC) indicated that the highest FTC was exhibited by Falcon V (ATM), Cannavaro (DP 50-9440), Greenbrooks (TG 50-9460), Hemi, Shenandoah III (SH 3), Shenandoah Elite (RK 6), Catelyst (NA-BT-1), Firenze, Falcon NG (CE 1), Turbo, CE-2, Mustang 4 (M4), Monet (LTP-610 CL), Finelawn Xpress (RP 2), Talladega (RP 3), Bullseye, RK 5, Traverse SPR (RK-1), Firecracker LS (MVS-MST), and PSG-85QR (Table 5). The lowest FTC at 50 DAC was exhibited by BAR Fa 6363, Aristotle, and Kentucky 31 (Table 2).

Traffic Responses in Fall 2009

Entries with the greatest FTC on 29 October 2009 (9 DAC) were SC-1, Jamboree (IS-TF-128), Falcon V (ATM), Traverse SPR (RK-1), Cochise IV (RKCL), Bullseye, Aggressor (IS-TF-153), Spyder LS (Z-2000), RK 5, and Cannavaro (DP 50-9440) (Table 3). Among these, SC-1, Jamboree (IS-TF-128), Falcon V (ATM), Traverse SPR (RK-1), Bullseye, Aggressor (IS-TF-153) rated the best for turfgrass quality under traffic stress on 29 October 2009 (Table 3).

Entries with the lowest FTC on 29 October 2009 (9 DAC) and poorest turfgrass quality under traffic stress were PSG-TTST, Magellan, GWTF, ATF 1328, Lindbergh, Einstein, JT-36, AST 7002, MVS-341, KZ-1, Compete (LS-06), Tahoe II, BAR Fa 6363, AST1001 (AST-4), Silverado, Aristotle, 06-WALK, AST 7001, and Kentucky 31 (Table 3).

CONCLUSIONS

Differences in traffic tolerance and recovery were observed among tall fescue cultivars and experimental selections during 2009. Selection of tall fescue cultivars for use on sports field should consider turfgrass quality, brown patch susceptibility, tolerance to traffic stress, and recovery.

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Table 1. Performance of tall fescue cultivars and selections without traffic stress in a turf trial seeded in September 2006 at North Brunswick, NJ. (Includes all entries of the 2006 National Turfgrass Evaluation Program (NTEP) Tall Fescue Test.)

Cultivar or Selection	-----Turfgrass Quality ¹ -----				Spring Green-up ² 19 April 2009	Brown Patch ³ 25 Aug. 2009
	2007-2009 Avg.	2007 Avg.	2008 Avg.	2009 Avg.		
1 Bullseye	8.2	7.9	8.4	8.2	5.0	7.7
2 Cochise IV (RKCL)	7.9	7.3	8.1	8.2	4.7	6.3
3 Wolfpack II (PST-5WMB)	7.7	7.1	7.9	8.2	6.3	6.3
4 Falcon V (ATM)	7.7	7.4	7.7	8.0	4.7	5.3
5 Turbo	7.7	7.1	8.0	7.9	4.0	4.7
6 Catelyst (NA-BT-1)	7.7	7.2	8.0	7.9	4.7	7.0
7 RK 5	7.6	7.3	7.8	7.8	5.7	6.0
8 Mustang 4 (M4)	7.5	6.7	7.7	8.2	5.3	6.3
9 Firecracker LS (MVS-MST)	7.5	7.4	7.8	7.4	4.7	5.3
10 Greenbrooks (TG 50-9460)	7.5	7.3	7.7	7.4	5.7	6.3
11 Cannavaro (DP 50-9440)	7.5	7.2	8.0	7.2	4.3	4.3
12 Monet (LTP-610 CL)	7.4	7.5	7.5	7.3	5.0	6.0
13 SC-1	7.3	7.4	7.0	7.6	4.7	7.3
14 Speedway (STR-8BPDx)	7.3	7.0	7.5	7.5	5.3	6.3
15 Faith (K06-WA)	7.3	6.5	7.6	7.8	5.7	5.7
16 Shenandoah Elite (RK 6)	7.3	6.8	7.7	7.5	4.0	5.7
17 RK 4	7.3	6.8	7.0	7.9	5.0	5.3
18 Essential (IS-TF-154)	7.3	7.3	7.1	7.3	6.0	5.7
19 Hermi	7.2	7.1	7.4	7.1	4.3	6.0
20 Spyder LS (Z-2000)	7.2	7.4	6.7	7.6	4.7	6.3

Table 1 (continued).

Cultivar or Selection	-----Turfgrass Quality ¹ -----					Spring Green-up ² 19 April 2009	Brown Patch ³ 25 Aug. 2009
	2007-2009 Avg.	2007 Avg.	2008 Avg.	2009 Avg.	2009 Avg.		
21 Shenandoah III (SH 3)	7.2	6.8	7.0	7.7	7.7	6.7	5.0
22 Finelawn Xpress (RP 2)	7.2	6.6	7.3	7.6	7.6	5.0	6.0
23 IS-TF-159	7.2	6.5	7.7	7.2	7.2	1.7	5.7
24 Firenze	7.1	6.6	7.4	7.2	7.2	5.7	6.7
25 Van Gogh (LTP-RK2)	7.0	6.2	6.9	8.0	8.0	6.3	7.0
26 3rd Millennium SRP	7.0	6.7	7.2	7.0	7.0	5.7	6.7
27 Rhambler SRP (Rhambler)	7.0	7.0	7.4	6.7	6.7	5.7	4.3
28 Aggressor (IS-TF-153)	7.0	6.2	7.1	7.6	7.6	5.0	6.7
29 Jamboree (IS-TF-128)	6.9	6.7	7.0	7.1	7.1	4.0	5.3
30 Talladega (RP 3)	6.9	6.9	6.7	7.1	7.1	4.3	5.7
31 Braveheart (DP 50-9407)	6.8	6.5	7.3	6.6	6.6	5.0	5.0
32 ATE	6.8	7.0	6.7	6.6	6.6	5.0	5.0
33 Raptor II (MVS-TF-158)	6.7	6.7	6.8	6.6	6.6	2.3	5.0
34 Traverse SPR (RK-1)	6.6	6.2	6.6	7.1	7.1	6.3	7.3
35 J-140	6.6	6.4	6.5	6.8	6.8	4.3	6.0
36 Rocket (IS-TF-147)	6.6	6.0	6.8	7.0	7.0	4.3	5.7
37 STR-8BB5	6.6	6.4	6.7	6.7	6.7	5.0	4.7
38 SR 8650 (STR-8LMM)	6.5	6.3	6.4	6.9	6.9	6.0	7.0
39 BBM	6.4	6.3	6.5	6.5	6.5	5.0	7.0
40 Escalade	6.4	6.6	6.5	6.2	6.2	5.3	5.0
41 Sidewinder (IS-TF-138)	6.3	6.3	6.0	6.7	6.7	1.0	6.0
42 PSG-82BR	6.3	5.9	6.2	6.8	6.8	6.7	5.0
43 BGR-TF1	6.2	6.0	6.3	6.3	6.3	4.7	3.7
44 Gazelle II (PST-5HP)	6.2	5.8	6.5	6.3	6.3	5.7	6.3
45 Falcon NG (CE 1)	6.2	6.0	6.3	6.1	6.1	7.7	7.0

(Continued)

Table 1 (continued).

Cultivar or Selection	-----Turfgrass Quality ¹ -----				Spring Green-up ² 19 April 2009	Brown Patch ³ 25 Aug. 2009
	2007-2009 Avg.	2007 Avg.	2008 Avg.	2009 Avg.		
46 CE-2	6.1	6.2	6.4	5.6	7.3	3.7
47 Titanium LS (MVS-BB-1)	6.0	5.9	6.0	6.3	7.0	6.0
48 Reunion (LS-03)	6.0	6.0	5.9	6.2	3.7	6.3
49 Corona (Col-M)	6.0	5.7	5.8	6.5	4.7	4.0
50 Cezanne Rz (LTP-CRL)	6.0	5.6	6.0	6.4	5.7	5.0
51 Trio (IS-TF-152)	6.0	5.9	6.1	5.7	2.3	2.7
52 Compete (LS-06)	6.0	5.6	6.6	5.7	4.7	5.0
53 J-130	5.9	5.7	5.9	6.2	4.3	4.3
54 RNP	5.9	6.2	5.9	5.5	5.0	4.3
55 Umbrella (DP 50-9411)	5.8	5.8	5.7	6.0	3.0	4.3
56 BAR Fa 6253	5.8	5.5	6.7	5.1	6.0	2.0
57 JT-45	5.8	5.5	6.2	5.8	5.3	4.3
58 Terrier (IS-TF-135)	5.8	5.8	6.0	5.7	2.3	2.3
59 GE-1	5.8	5.8	5.5	6.1	5.3	5.0
60 JT-41	5.8	6.1	5.3	5.9	5.7	4.7
61 AST9001 (AST-3)	5.8	5.9	5.8	5.6	4.7	3.3
62 Renovate (LS-11)	5.7	5.3	5.8	6.1	3.3	5.7
63 CE-4	5.7	6.2	5.8	5.2	6.0	4.3
64 PSG-85QR	5.7	5.3	6.1	5.8	5.0	4.3
65 Fat Cat (IS-TF-161)	5.7	5.7	6.0	5.2	4.0	3.7
66 Padre	5.7	5.7	5.8	5.5	6.7	4.3
67 Rebel IV	5.7	6.1	5.5	5.4	6.0	5.3
68 AST9003 (AST-1)	5.6	5.1	6.2	5.6	4.7	4.3
69 KZ-1	5.6	5.7	5.7	5.5	4.3	3.3
70 AST1001 (AST-4)	5.6	5.9	5.7	5.2	4.3	4.3

(Continued)

Table 1 (continued).

Cultivar or Selection	-----Turfgrass Quality ¹ -----					Spring Green-up ² 19 April 2009	Brown Patch ³ 25 Aug. 2009
	2007- 2009 Avg.	2007 Avg.	2008 Avg.	2009 Avg.	2009 Avg.		
71 Hudson (DKS)	5.6	6.2	5.7	5.1	5.0	4.0	
72 Toccoa (IS-TF-151)	5.6	5.6	6.0	5.1	2.7	2.0	
73 Pedigree (ATF-1199)	5.5	5.0	5.8	5.8	5.3	6.0	
74 Tulsa Time (Tulsa III)	5.5	5.4	5.4	5.8	5.0	5.7	
75 Skyline	5.5	5.2	5.6	5.7	3.7	4.0	
76 Crossfire 3 (Col-J)	5.5	5.7	5.3	5.4	4.3	4.7	
77 JT-42	5.5	5.6	5.7	5.2	5.0	2.7	
78 AST 7003	5.5	5.8	5.0	5.6	5.0	5.0	
79 KZ-2	5.4	5.5	5.2	5.5	4.0	3.3	
80 Ninja 3 (ATF 1247)	5.4	5.1	5.9	5.4	5.7	3.7	
81 Honky Tonk (RAD-TF17)	5.4	5.5	5.4	5.4	3.3	3.3	
82 Justice	5.4	5.2	5.2	5.8	5.7	6.0	
83 06-DUST	5.4	5.1	5.6	5.5	5.7	5.7	
84 Col-1	5.4	5.1	5.6	5.4	4.0	4.0	
85 MVS-1107	5.4	4.8	5.9	5.4	5.7	5.7	
86 Titanium	5.4	5.2	5.7	5.3	5.0	5.0	
87 Falcon IV	5.4	5.8	4.8	5.5	6.7	6.0	
88 AST9002 (AST-2)	5.3	6.0	5.2	4.9	5.7	4.0	
89 GWTF	5.3	5.3	5.3	5.2	4.3	3.0	
90 JT-36	5.3	5.5	5.5	4.9	4.3	4.7	
91 Darlington (CS-TF1)	5.3	5.7	6.0	4.1	5.0	4.0	
92 ATF 1328	5.3	5.5	4.8	5.4	4.0	4.7	
93 Turbo Rz (Burl-TF8)	5.2	5.3	5.3	5.2	5.3	4.7	
94 AST 7002	5.2	5.1	5.6	5.0	4.7	4.0	
95 Tahoe II	5.2	5.7	5.4	4.6	4.3	3.3	

(Continued)

Table 1 (continued).

Cultivar or Selection	-----Turfgrass Quality ¹ -----					Spring Green-up ² 19 April 2009	Brown Patch ³ 25 Aug. 2009
	2007-2009 Avg.	2007 Avg.	2008 Avg.	2009 Avg.	2009 Avg.		
96 Stetson II (NA-SS)							
97 MVS-341	5.1	5.1	5.3	5.0	5.7	3.7	
98 JT-33	5.1	5.6	5.1	4.7	4.0	5.0	
99 BGR-TF2	5.1	5.6	5.2	4.6	4.0	3.7	
100 Rembrandt	5.1	5.3	4.7	5.2	4.0	7.3	
	5.1	5.4	4.8	5.0	7.3	5.0	
101 312	4.9	5.3	4.5	5.0	3.3	4.3	
102 Biltmore	4.8	4.9	4.6	5.0	6.3	5.3	
103 06-WALK	4.8	5.1	5.0	4.3	6.0	5.0	
104 Hunter	4.8	5.0	4.6	4.8	4.0	4.7	
105 PSG-TTRH	4.8	4.9	5.0	4.3	5.3	5.3	
106 AST 7001	4.7	5.0	5.1	4.1	4.7	3.3	
107 Einstein	4.6	5.2	4.2	4.5	6.3	3.3	
108 STR-8GRQR	4.5	4.6	4.9	4.1	6.0	4.0	
109 BAR Fa 6363	4.5	4.5	4.6	4.3	6.0	3.3	
110 Magellan	4.4	4.8	4.4	3.9	5.3	4.0	
111 GO-1BFD	4.3	4.2	4.5	4.3	8.0	6.7	
112 PSG-RNDR	4.2	4.1	4.0	4.5	3.3	5.3	
113 Lindbergh	4.1	4.3	4.4	3.7	6.7	3.3	
114 PSG-TTST	3.8	4.2	3.9	3.4	7.0	6.0	
115 Plato	3.8	4.3	4.0	3.1	6.3	3.3	
116 Aristotle	3.6	3.9	4.0	2.8	7.0	2.3	
117 Silverado	3.2	3.5	3.4	2.7	8.0	3.3	
118 Kentucky 31	1.1	1.1	1.1	1.0	9.0	4.7	

(Continued)

Table 1 (continued).

Cultivar or Selection	-----Turfgrass Quality ¹ -----				Spring Green-up ² 19 April 2009	Brown Patch ³ 25 Aug. 2009
	2007-2009 Avg.	2007 Avg.	2008 Avg.	2009 Avg.		
LSD at 5% =	0.8	1.0	1.2	1.2	1.9	2.4

¹9 = best turfgrass quality
²9 = earliest spring green-up
³9 = least disease

Table 2. Traffic tolerance and recovery of tall fescue cultivars and selections during the spring of 2009. The turf trial was seeded in September 2006 at North Brunswick, NJ. (Includes all entries of the 2006 National Turfgrass Evaluation Program (NTEP) Tall Fescue Test.)

Cultivar or Selection	No Wear 27 April 2009	-----Traffic Tolerance ¹ -----		-----Wear Tolerance ³ -----		-----Recovery-----	
	9 DAC ² 15 May 2009	8 DAC 14 May 2009	30 April 2009	30 April 2009	6 DAW ⁴ 6 May 2009	50 DAC 25 June 2009	
	0-100% scale ⁵	1-9 scale ⁶	0-100% scale	1-9 scale	0-100% scale	0-100% scale	
1 Falcon V (ATM)	76.7	8.3	65.0	8.3	63.3	90.0	
2 SC-1	73.3	8.0	63.3	7.3	68.3	76.7	
3 Essential (IS-TF-154)	71.7	8.0	58.3	7.7	63.3	78.3	
4 Shenandoah III (SH 3)	81.7	7.7	61.7	8.0	61.7	83.3	
5 Falcon NG (CE 1)	80.0	8.7	56.7	7.0	61.7	81.7	
6 Traverse SPR (RK-1)	78.3	8.0	56.7	7.3	63.3	80.0	
7 Greenbrooks (TG 50-9460)	78.3	8.0	55.0	7.0	55.0	83.3	
8 Bullseye	78.3	8.0	55.0	7.3	61.7	80.0	
9 Cochise IV (RKCL)	71.7	8.0	58.3	7.7	61.7	76.7	
10 Hemi	78.3	7.7	55.0	6.0	58.3	83.3	
11 Firecracker LS (MVS-MST)	70.0	7.0	58.3	7.3	55.0	80.0	
12 RK 4	83.3	6.7	56.7	7.0	58.3	78.3	
13 Cannavaro (DP 50-9440)	65.0	7.3	56.7	7.3	58.3	85.0	
14 Catelyst (NA-BT-1)	78.3	6.7	55.0	6.3	58.3	81.7	
15 RK 5	78.3	7.0	51.7	6.7	58.3	80.0	
16 Pedigree (ATF-1199)	68.3	6.7	45.0	5.7	48.3	76.7	
17 ATE	70.0	6.3	48.3	6.0	51.7	73.3	
18 PSG-85QR	75.0	7.0	48.3	6.3	50.0	80.0	
19 Faith (K06-WA)	70.0	7.0	55.0	7.0	53.3	76.7	
20 Firenze	73.3	6.3	48.3	5.7	55.0	81.7	

(Continued)

Table 2 (continued).

Cultivar or Selection	No Wear 27 April 2009	9 DAC ² 15 May 2009	Traffic Tolerance ¹ ----- 8 DAC 14 May 2009		Wear Tolerance ³ ----- 30 April 2009	Recovery----- 6 DAW ⁴ 6 May 2009		50 DAC 25 June 2009
	0-100% scale ⁵	1-9 scale ⁶	0-100% scale	1-9 scale	0-100% scale	0-100% scale		
21 J-140	70.0	55.0	6.0	5.3	43.3	48.3	73.3	
22 Rebel IV	75.0	55.0	5.7	5.0	43.3	53.3	71.7	
23 Turbo	75.0	53.3	7.0	7.0	53.3	51.7	81.7	
24 Mustang 4 (M4)	80.0	53.3	7.0	5.3	50.0	51.7	81.7	
25 PSG-82BR	71.7	53.3	6.3	5.3	40.0	55.0	75.0	
26 CE-2	71.7	53.3	6.0	6.3	53.3	51.7	81.7	
27 Monet (LTP-610 CL)	73.3	53.3	6.0	6.3	48.3	55.0	81.7	
28 Spyder LS (Z-2000)	63.3	53.3	6.0	5.0	35.0	51.7	75.0	
29 MVS-1107	78.3	53.3	5.7	5.3	38.3	51.7	75.0	
30 Shenandoah Elite (RK 6)	63.3	51.7	6.3	6.0	41.7	48.3	83.3	
31 Jamboree (IS-TF-128)	66.7	51.7	6.3	5.3	45.0	51.7	71.7	
32 BAR Fa 6253	73.3	51.7	6.0	5.3	38.3	53.3	76.7	
33 Van Gogh (LTP-RK2)	71.7	51.7	6.0	6.7	51.7	55.0	73.3	
34 3rd Millennium SRP	73.3	51.7	5.7	5.0	45.0	50.0	76.7	
35 Honky Tonk (RAD-TF17)	75.0	51.7	5.3	5.7	46.7	48.3	73.3	
36 IS-TF-159	60.0	50.0	6.3	5.7	35.0	50.0	75.0	
37 JT-42	71.7	50.0	6.3	4.0	38.3	43.3	70.0	
38 Magellan	71.7	50.0	6.3	4.0	35.0	48.3	60.0	
39 Talladega (RP 3)	65.0	50.0	6.0	5.3	43.3	50.0	81.7	
40 Wolfpack II (PST-5WMB)	80.0	50.0	6.0	4.7	45.0	51.7	78.3	
41 Rocket (IS-TF-147)	70.0	50.0	6.0	5.0	38.3	50.0	73.3	
42 Escalade	71.7	50.0	5.7	5.0	41.7	48.3	70.0	
43 Skyline	66.7	50.0	5.7	4.3	33.3	46.7	68.3	
44 JT-45	65.0	50.0	5.7	4.0	36.7	43.3	68.3	
45 JT-33	55.0	50.0	5.3	3.0	28.3	45.0	73.3	

(Continued)

Table 2 (continued).

Cultivar or Selection	No Wear 27 April 2009	-----Traffic Tolerance ¹ ----- 9 DAC ² 15 May 2009		-----Wear Tolerance ³ ----- 30 April 2009		-----Recovery----- 6 DAW ⁴ 6 May 2009		50 DAC 25 June 2009
	0-100% scale ⁵	1-9 scale ⁶	0-100% scale	1-9 scale	0-100% scale	0-100% scale		
46 Turbo Rz (Burl-TF8)	71.7	5.0	41.7	5.3	48.3	68.3		
47 Titanium LS (MVS-BB-1)	80.0	48.3	50.0	5.3	56.7	73.3		
48 Speedway (STR-8BPDX)	65.0	48.3	50.0	6.0	53.3	76.7		
49 STR-8BB5	73.3	48.3	33.3	4.3	41.7	71.7		
50 Rambler SRP (Rambler)	68.3	48.3	46.7	6.3	51.7	76.7		
51 BGR-TF1	68.3	46.7	35.0	4.3	50.0	71.7		
52 Raptor II (MVS-TF-158)	61.7	46.7	45.0	6.0	53.3	68.3		
53 Finelawn Xpress (RP 2)	71.7	46.7	41.7	4.7	46.7	81.7		
54 GE-1	66.7	46.7	35.0	4.7	46.7	68.3		
55 BBM	66.7	46.7	43.3	4.3	40.0	70.0		
56 AST1001 (AST-4)	70.0	45.0	30.0	3.3	38.3	68.3		
57 MVS-341	66.7	45.0	26.7	3.7	38.3	66.7		
58 Fat Cat (IS-TF-161)	60.0	45.0	30.0	4.3	41.7	73.3		
59 Justice	66.7	45.0	36.7	4.0	45.0	70.0		
60 Biltmore	68.3	45.0	31.7	4.0	41.7	66.7		
61 SR 8650 (STR-8LMM)	71.7	45.0	35.0	4.0	48.3	65.0		
62 Titanium	60.0	45.0	31.7	4.3	43.3	71.7		
63 Gazelle II (PST-5HP)	65.0	43.3	41.7	4.3	50.0	76.7		
64 Sidewinder (IS-TF-138)	53.3	43.3	28.3	3.3	40.0	71.7		
65 Ninja 3 (ATF 1247)	66.7	43.3	33.3	4.0	45.0	66.7		
66 Falcon IV	71.7	43.3	36.7	4.3	43.3	66.7		
67 J-130	65.0	43.3	26.7	3.3	45.0	66.7		
68 Aggressor (IS-TF-153)	75.0	43.3	38.3	5.0	50.0	76.7		
69 Trio (IS-TF-152)	63.3	43.3	31.7	4.3	45.0	71.7		
70 Padre	73.3	43.3	31.7	3.3	43.3	68.3		

(Continued)

Table 2 (continued).

Cultivar or Selection	No Wear 27 April 2009	-----Traffic Tolerance ¹ ----- 9 DAC ² 15 May 2009		-----Wear Tolerance ³ ----- 30 April 2009		-----Recovery----- 6 DAW ⁴ 6 May 2009		50 DAC 25 June 2009
	0-100% scale ⁵	1-9 scale ⁶	0-100% scale	1-9 scale	0-100% scale	0-100% scale		
71 Tulsa Time (Tulsa III)	68.3	41.7	4.7	30.0	3.3	43.3	71.7	
72 JT-36	58.3	41.7	4.7	26.7	3.3	40.0	71.7	
73 GO-1BFD	71.7	41.7	4.3	33.3	3.3	40.0	63.3	
74 Toccoa (IS-TF-151)	43.3	40.0	4.7	26.7	5.0	40.0	71.7	
75 Cezanne Rz (LTP-CRL)	73.3	40.0	4.7	36.7	4.7	41.7	66.7	
76 Corona (Col-M)	70.0	40.0	4.7	31.7	3.0	41.7	66.7	
77 Rembrandt	63.3	40.0	4.7	26.7	2.7	33.3	65.0	
78 06-WALK	61.7	40.0	4.7	25.0	3.0	40.0	63.3	
79 Col-1	63.3	38.3	4.3	38.3	4.3	43.3	61.7	
80 Reunion (LS-03)	71.7	38.3	4.0	31.7	2.7	38.3	68.3	
81 AST 7003	68.3	38.3	4.0	28.3	3.0	40.0	68.3	
82 JT-41	66.7	38.3	4.0	31.7	3.3	43.3	65.0	
83 RNP	73.3	38.3	4.0	30.0	3.0	35.0	65.0	
84 Stetson II (NA-SS)	63.3	38.3	4.0	25.0	2.7	35.0	65.0	
85 Braveheart (DP 50-9407)	65.0	38.3	4.0	30.0	4.3	43.3	61.7	
86 312	51.7	38.3	3.7	30.0	2.7	33.3	66.7	
87 Compete (LS-06)	61.7	38.3	3.7	23.3	3.0	35.0	66.7	
88 PSG-TTRH	65.0	38.3	3.7	28.3	3.3	40.0	65.0	
89 PSG-TTST	65.0	38.3	3.7	23.3	3.0	35.0	56.7	
90 BAR Fa 6363	68.3	38.3	3.0	26.7	2.7	36.7	51.7	
91 CE-4	61.7	36.7	4.3	31.7	2.7	36.7	73.3	
92 Hunter	60.0	36.7	4.3	28.3	2.0	36.7	65.0	
93 AST 7002	66.7	36.7	4.3	31.7	3.3	41.7	61.7	
94 Einstein	68.3	36.7	4.0	30.0	3.3	33.3	61.7	
95 Darlington (CS-TF1)	56.7	36.7	4.0	25.0	3.0	38.3	60.0	

(Continued)

Table 2 (continued).

Cultivar or Selection	No Wear 27 April 2009	-----Traffic Tolerance ¹ ----- 9 DAC ² 15 May 2009		-----Wear Tolerance ³ ----- 30 April 2009		-----Recovery----- 6 DAW ⁴ 6 May 2009		50 DAC 25 June 2009
	0-100% scale ⁵	1-9 scale ⁶	0-100% scale	1-9 scale	0-100% scale	0-100% scale		
96 Lindbergh	65.0	4.0	26.7	2.7	33.3	56.7		
97 KZ-1	66.7	3.7	30.0	3.0	36.7	61.7		
98 Crossfire 3 (Col-J)	66.7	3.7	25.0	2.7	35.0	56.7		
99 Terrier (IS-TF-135)	50.0	3.3	23.3	3.3	33.3	68.3		
100 AST9002 (AST-2)	68.3	3.3	30.0	3.0	35.0	63.3		
101 AST9003 (AST-1)	58.3	3.3	25.0	1.7	30.0	60.0		
102 Plato	63.3	3.3	26.7	2.7	33.3	58.3		
103 AST9001 (AST-3)	70.0	3.0	23.3	2.3	36.7	63.3		
104 Renovate (LS-11)	58.3	3.0	21.7	2.0	33.3	58.3		
105 GWTF	58.3	4.0	30.0	3.3	35.0	68.3		
106 06-DUST	68.3	4.0	31.7	3.7	40.0	66.7		
107 PSG-RNDR	53.3	4.0	25.0	2.0	35.0	61.7		
108 BGR-TF2	60.0	3.7	28.3	2.7	40.0	63.3		
109 Silverado	70.0	3.7	28.3	2.0	35.0	58.3		
110 Tahoe II	70.0	3.3	25.0	2.7	36.7	63.3		
111 STR-8GRQR	63.3	3.7	28.3	3.3	38.3	66.7		
112 KZ-2	50.0	3.7	23.3	2.3	33.3	63.3		
113 AST 7001	56.7	3.3	20.0	1.7	31.7	61.7		
114 ATF 1328	56.7	2.7	20.0	2.0	31.7	66.7		
115 Hudson (DKS)	61.7	2.7	21.7	2.0	31.7	66.7		
116 Umbrella (DP 50-9411)	55.0	2.7	20.0	2.3	33.3	58.3		
117 Aristotle	61.7	2.7	18.3	1.7	26.7	48.3		
118 Kentucky 31	55.0	1.3	5.0	1.0	13.3	41.7		

(Continued)

Table 2 (continued).

Cultivar or Selection	No Wear		-----Traffic Tolerance ¹ -----		-----Wear Tolerance ³ -----		-----Recovery-----	
	27 April 2009	9 DAC ² 15 May 2009	8 DAC 14 May 2009	30 April 2009	30 April 2009	6 DAW ⁴ 6 May 2009	50 DAC 25 June 2009	
LSD at 5% =	0-100% scale ⁵	1-9 scale ⁶	0-100% scale	1-9 scale	0-100% scale	1-9 scale	0-100% scale	
	0.6	0.7	0.8	0.8	0.8	1.2	1.1	1.6

¹Traffic tolerance rated after 10 compaction passes

²DAC = days after compaction

³Wear tolerance rated after 24 passes of the wear simulator

⁴DAW = days after wear

⁵Fullness of turfgrass canopy using a 0 to 100% scale (0 = absence of a turfgrass canopy to 100 = full canopy)

⁶Turf quality under wear and traffic stresses rated on a 1 to 9 scale where 9 = fullest turfgrass canopy and most uniform ground cover after wear and traffic stress

Table 3. Traffic tolerance and recovery of tall fescue cultivars and selections during October 2009. The turf trial was seeded in September 2006 at North Brunswick, NJ. (Includes all entries of the 2006 National Turfgrass Evaluation Program (NTEP) Tall Fescue Test.)

Cultivar or Selection	No Wear 13 Oct. 2009	-----Traffic Tolerance ¹ ----- 9 DAC ² 29 Oct. 2009		9 DAC 29 Oct. 2009	-----Wear Tolerance ³ ----- 16 Oct. 2009	15 Oct. 2009	Recovery 5 DAW ⁴ 20 Oct. 2009
	0-100% scale ⁵	1-9 scale ⁶	0-100% scale	1-9 scale	0-100% scale		
1 SC-1	88.3	60.0	8.3	70.0	8.7	75.0	
2 Jamboree (IS-TF-128)	95.0	56.7	7.3	63.3	7.7	66.7	
3 Falcon V (ATM)	93.3	55.0	7.3	61.7	6.7	66.7	
4 Traverse SPR (RK-1)	91.7	53.3	7.3	56.7	7.3	61.7	
5 Cochise IV (RKCL)	95.0	53.3	6.3	51.7	6.3	56.7	
6 Bullseye	96.7	51.7	7.0	63.3	7.7	63.3	
7 Spyder LS (Z-2000)	93.3	51.7	6.3	60.0	7.3	60.0	
8 Aggressor (IS-TF-153)	93.3	51.7	7.0	58.3	7.0	60.0	
9 RK 5	95.0	50.0	6.3	61.7	7.3	63.3	
10 Cannavaro (DP 50-9440)	91.7	50.0	6.0	56.7	7.7	60.0	
11 Firecracker LS (MVS-MST)	98.3	48.3	5.7	56.7	6.3	58.3	
12 Turbo	95.0	48.3	5.7	55.0	6.3	56.7	
13 Faith (K06-WA)	91.7	46.7	6.3	63.3	7.0	63.3	
14 Greenbrooks (TG 50-9460)	86.7	46.7	6.3	51.7	6.7	51.7	
15 Wolfpack II (PST-5WMB)	90.0	46.7	6.0	51.7	6.3	55.0	
16 Rocket (IS-TF-147)	91.7	46.7	5.7	51.7	6.3	56.7	
17 Essential (IS-TF-154)	95.0	46.7	5.7	51.7	6.0	55.0	
18 Monet (LTP-610 CL)	90.0	45.0	5.7	55.0	6.3	56.7	
19 RK 4	93.3	45.0	5.7	53.3	6.7	56.7	
20 Catelyst (NA-BT-1)	96.7	45.0	5.7	51.7	6.0	56.7	

(Continued)

Table 3 (continued).

Cultivar or Selection	No Wear 13 Oct. 2009	-----Traffic Tolerance ¹ ----- 9 DAC ² 29 Oct. 2009		-----Wear Tolerance ³ ----- 16 Oct. 2009		Recovery 5 DAW ⁴ 20 Oct. 2009
	0-100% scale ⁵	1-9 scale ⁶	0-100% scale	1-9 scale	0-100% scale	
21 ATE	93.3	45.0	5.7	51.7	5.7	56.7
22 BBM	90.0	45.0	6.0	48.3	5.7	48.3
23 Shenandoah III (SH 3)	91.7	43.3	6.0	60.0	6.7	58.3
24 Van Gogh (LTP-RK2)	88.3	43.3	5.7	58.3	6.3	58.3
25 Rhambler SRP (Rhambler)	90.0	43.3	6.0	56.7	6.0	58.3
26 IS-TF-159	90.0	43.3	6.0	53.3	6.7	55.0
27 Speedway (STR-8BPDx)	91.7	43.3	5.3	45.0	5.0	45.0
28 Finelawn Xpress (RP 2)	90.0	41.7	5.3	46.7	5.3	46.7
29 Falcon NG (CE 1)	88.3	41.7	5.0	45.0	5.0	48.3
30 Shenandoah Elite (RK 6)	90.0	40.0	5.7	53.3	5.3	51.7
31 Mustang 4 (M4)	93.3	40.0	5.3	51.7	6.3	51.7
32 Justice	83.3	40.0	4.7	45.0	5.7	50.0
33 PSG-82BR	90.0	40.0	4.7	45.0	5.0	48.3
34 Firenze	96.7	38.3	5.0	45.0	5.0	53.3
35 Rebel IV	83.3	38.3	4.7	36.7	5.0	41.7
36 Hemi	93.3	36.7	5.7	48.3	6.0	48.3
37 Sidewinder (IS-TF-138)	90.0	36.7	5.3	45.0	5.7	46.7
38 CE-2	88.3	36.7	5.0	41.7	5.0	45.0
39 Pedigree (ATF-1199)	86.7	36.7	5.0	38.3	5.0	40.0
40 Cezanne Rz (LTP-CRL)	86.7	35.0	4.7	41.7	4.7	41.7
41 Gazelle II (PST-5HP)	88.3	35.0	4.0	40.0	5.0	41.7
42 Escalade	83.3	35.0	5.0	38.3	4.3	43.3
43 SR 8650 (STR-8LMM)	86.7	35.0	4.7	38.3	5.3	41.7
44 J-140	91.7	33.3	4.3	45.0	5.7	46.7
45 STR-8BB5	90.0	33.3	4.3	43.3	5.0	45.0

(Continued)

Table 3 (continued).

Cultivar or Selection	No Wear 13 Oct. 2009	-----Traffic Tolerance ¹ ----- 9 DAC ² 29 Oct. 2009		-----Wear Tolerance ³ ----- 16 Oct. 2009		Recovery 5 DAW ⁴ 20 Oct. 2009
	0-100% scale ⁵	1-9 scale ⁶	0-100% scale	1-9 scale	0-100% scale	
46 MVS-1107	88.3	33.3	5.0	40.0	4.3	41.7
47 GE-1	86.7	33.3	4.3	38.3	4.7	40.0
48 Talladega (RP 3)	91.7	33.3	4.3	38.3	4.7	43.3
49 Trio (IS-TF-152)	88.3	33.3	5.0	35.0	4.7	40.0
50 JT-45	85.0	33.3	4.7	35.0	5.0	40.0
51 Titanium LS (MVS-BB-1)	90.0	31.7	4.3	46.7	5.3	46.7
52 Braveheart (DP 50-9407)	85.0	31.7	5.0	41.7	5.7	43.3
53 Honky Tonk (RAD-TF17)	78.3	31.7	4.7	40.0	4.3	41.7
54 BGR-TF1	83.3	31.7	4.3	36.7	4.7	38.3
55 Col-1	80.0	31.7	4.0	35.0	4.0	35.0
56 Raptor II (MVS-TF-158)	93.3	30.0	5.0	50.0	5.7	46.7
57 Umbrella (DP 50-9411)	90.0	30.0	4.0	41.7	5.0	41.7
58 PSG-85QR	88.3	30.0	5.0	36.7	5.0	41.7
59 Corona (Col-M)	83.3	30.0	4.3	36.7	4.3	41.7
60 3rd Millennium SRP	90.0	30.0	3.7	36.7	4.7	38.3
61 Tulsa Time (Tulsa III)	80.0	30.0	4.3	35.0	4.0	36.7
62 CE-4	83.3	30.0	3.7	33.3	4.0	36.7
63 Turbo Rz (Burl-TF8)	81.7	28.3	4.3	33.3	4.3	38.3
64 Titanium	86.7	28.3	3.7	28.3	3.0	33.3
65 Crossfire 3 (Col-J)	78.3	28.3	3.3	28.3	3.7	31.7
66 JT-42	85.0	28.3	3.7	26.7	3.7	33.3
67 Toccoa (IS-TF-151)	90.0	26.7	4.3	38.3	5.0	40.0
68 GO-1BFD	80.0	26.7	3.0	31.7	4.7	35.0
69 Padre	78.3	26.7	3.7	30.0	4.0	31.7
70 STR-8GRQR	75.0	26.7	4.3	28.3	4.0	33.3

(Continued)

Table 3 (continued).

Cultivar or Selection	No Wear 13 Oct. 2009	-----Traffic Tolerance ¹ ----- 9 DAC ² 29 Oct. 2009		-----Wear Tolerance ³ ----- 16 Oct. 2009	Recovery 5 DAW ⁴ 20 Oct. 2009	
	0-100% scale ⁵	1-9 scale ⁶	0-100% scale	1-9 scale	0-100% scale	
71 JT-41	88.3	26.7	3.3	28.3	3.7	33.3
72 BGR-TF2	81.7	25.0	3.0	36.7	4.7	36.7
73 Falcon IV	88.3	25.0	4.3	35.0	4.7	36.7
74 Fat Cat (IS-TF-161)	81.7	25.0	3.7	33.3	4.0	35.0
75 Reunion (LS-03)	81.7	25.0	3.7	33.3	3.7	36.7
76 06-DUST	76.7	25.0	3.7	30.0	3.0	31.7
77 J-130	81.7	25.0	3.3	30.0	3.3	35.0
78 Biltmore	76.7	25.0	4.0	28.3	3.7	33.3
79 Rembrandt	78.3	25.0	3.7	26.7	3.3	28.3
80 Skyline	85.0	23.3	4.0	30.0	3.7	33.3
81 Hunter	75.0	23.3	2.7	26.7	3.3	31.7
82 BAR Fa 6253	78.3	23.3	2.7	26.7	2.7	28.3
83 Stetson II (NA-SS)	68.3	23.3	3.7	25.0	3.0	28.3
84 Ninja 3 (ATF 1247)	83.3	23.3	2.7	23.3	3.3	28.3
85 Terrier (IS-TF-135)	91.7	21.7	3.7	31.7	4.0	36.7
86 Hudson (DKS)	78.3	21.7	3.0	30.0	3.0	30.0
87 AST9001 (AST-3)	85.0	21.7	3.7	28.3	3.7	30.0
88 Darlington (CS-TF1)	73.3	21.7	3.0	25.0	3.3	26.7
89 312	65.0	21.7	3.0	25.0	2.7	26.7
90 AST 7003	78.3	21.7	2.7	25.0	3.0	30.0
91 PSG-TTRH	75.0	21.7	3.0	23.3	3.3	28.3
92 JT-33	78.3	21.7	2.7	23.3	3.0	28.3
93 Plato	71.7	21.7	2.7	21.7	2.7	25.0
94 KZ-2	80.0	20.0	2.7	26.7	3.3	28.3
95 RNP	78.3	20.0	2.7	26.7	3.0	30.0

(Continued)

Table 3 (continued).

Cultivar or Selection	No Wear 13 Oct. 2009	-----Traffic Tolerance ¹ ----- 9 DAC ² 29 Oct. 2009		-----Wear Tolerance ³ ----- 16 Oct. 2009		Recovery 5 DAW ⁴ 20 Oct. 2009
	0-100% scale ⁵	1-9 scale ⁶	0-100% scale	1-9 scale	0-100% scale	
96 Renovate (LS-11)	83.3	20.0	2.3	25.0	3.0	28.3
97 AST9002 (AST-2)	76.7	20.0	3.0	23.3	3.0	26.7
98 PSG-RNDR	70.0	20.0	2.3	21.7	3.0	25.0
99 Magellan	78.3	18.3	2.7	23.3	2.7	28.3
100 GWTF	81.7	18.3	2.7	23.3	2.3	28.3
101 ATF 1328	78.3	18.3	2.7	21.7	2.0	26.7
102 AST 7002	78.3	18.3	1.7	21.7	2.3	26.7
103 PSG-TTST	80.0	18.3	2.7	20.0	3.0	25.0
104 Lindbergh	71.7	18.3	2.3	18.3	2.0	18.3
105 Einstein	75.0	18.3	2.3	18.3	2.0	21.7
106 JT-36	81.7	18.3	2.0	18.3	2.0	25.0
107 AST9003 (AST-1)	88.3	16.7	3.0	28.3	3.3	30.0
108 Compete (LS-06)	85.0	16.7	2.3	28.3	3.3	28.3
109 MVS-341	83.3	16.7	2.7	25.0	3.3	28.3
110 KZ-1	78.3	16.7	2.7	23.3	2.3	26.7
111 Tahoe II	78.3	16.7	2.3	18.3	2.0	21.7
112 BAR Fa 6363	68.3	16.7	2.0	18.3	2.3	21.7
113 AST1001 (AST-4)	81.7	15.0	2.3	20.0	2.7	23.3
114 Silverado	66.7	15.0	2.0	15.0	1.7	18.3
115 Aristotle	61.7	15.0	1.3	13.3	1.7	16.7
116 06-WALK	73.3	13.3	2.0	18.3	2.0	21.7
117 AST 7001	78.3	10.0	1.3	15.0	1.3	18.3
118 Kentucky 31	51.7	8.3	1.0	5.0	1.0	5.0

(Continued)

Table 3 (continued).

Cultivar or Selection	No Wear 13 Oct. 2009	-----Traffic Tolerance ¹ ----- 9 DAC ² 29 Oct. 2009	-----Wear Tolerance ³ ----- 16 Oct. 2009	Recovery 5 DAW ⁴ 20 Oct. 2009
LSD at 5% =	0-100% scale ⁵ 0.8	1-9 scale ⁶ 1.0	0-100% scale 1.2	0-100% scale 1.9
				2.4

¹Traffic tolerance rated after 10 compaction passes

²DAC = days after compaction

³Wear tolerance rated after 24 passes of the wear simulator

⁴DAW = days after wear

⁵Fullness of turfgrass canopy using a 0 to 100% scale (0 = absence of a turfgrass canopy to 100 = full canopy)

⁶Turf quality under wear and traffic stresses rated on a 1 to 9 scale where 9 = fullest turfgrass canopy and most uniform ground cover after wear and traffic stress