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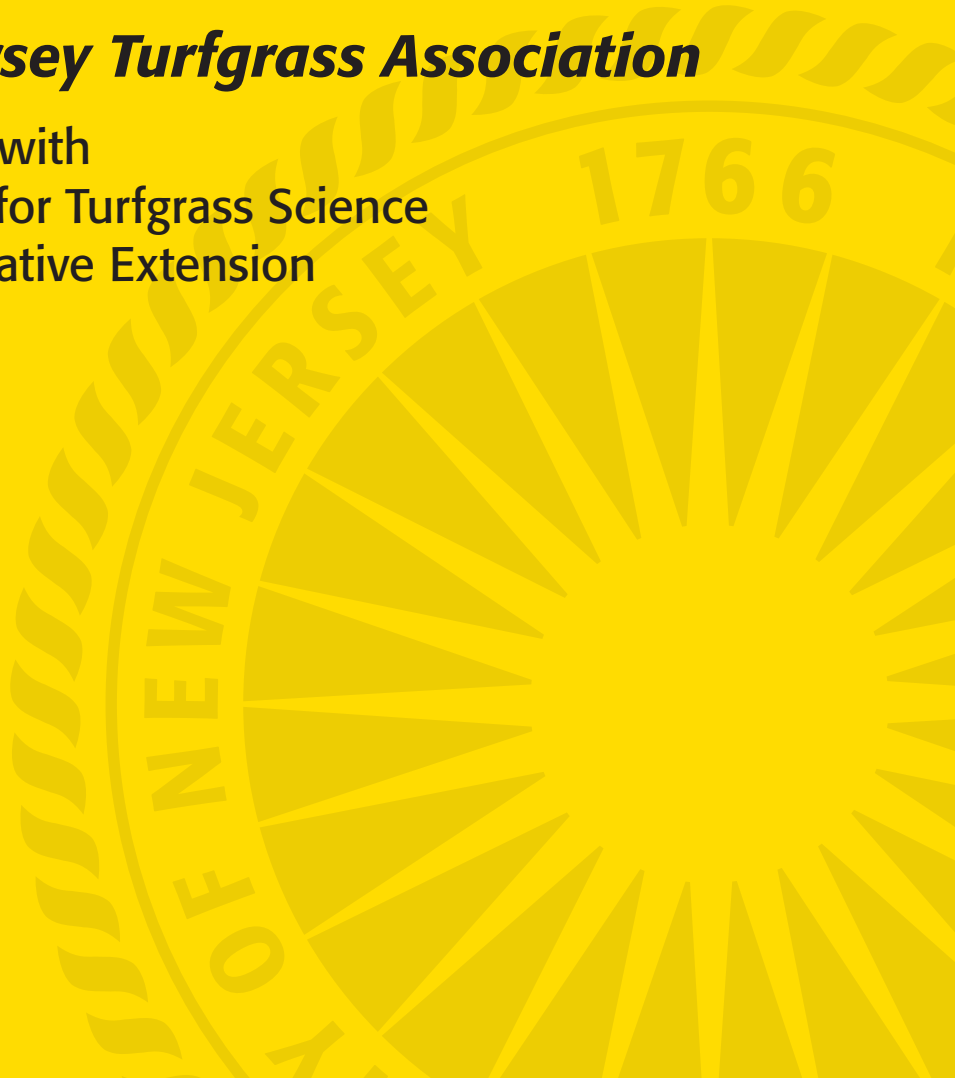

2009 RUTGERS TURFGRASS PROCEEDINGS

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The Rutgers Turfgrass Proceedings is published yearly by the Rutgers Center for Turfgrass Science, Rutgers Cooperative Extension, and the New Jersey Agricultural Experiment Station, School of Environmental and Biological Sciences, Rutgers, The State University of New Jersey in cooperation with the New Jersey Turfgrass Association. The purpose of this document is to provide a forum for the dissemination of information and the exchange of ideas and knowledge. The proceedings provide turfgrass managers, research scientists, extension specialists, and industry personnel with opportunities to communicate with co-workers. Through this forum, these professionals also reach a more general audience, which includes the public.

This publication includes lecture notes of papers presented at the 2009 New Jersey Turfgrass Expo. Publication of these lectures provides a readily available source of information covering a wide range of topics and includes technical and popular presentations of importance to the turfgrass industry.

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

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

RESPONSE OF PERENNIAL RYEGRASS TO WEAR STRESS IN 2009

Bradley S. Park, James A. Murphy, Tracy J. Lawson, William K. Dickson, and Joseph B. Clark[1]

Increased use of sports fields and other recreational sites presents a difficult challenge for turfgrass managers responsible for maintaining durable, uniform, and safe natural playing surfaces. Establishment of 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.

Perennial ryegrass, a common component of seed mixtures for parks, grounds, and other turfgrass areas, has been traditionally utilized where rapid turfgrass establishment and soil stabilization is desired, including seeding at a time of year when the probability of successful establishment is low (Beard, 1973). Its popularity for use on sports fields is a result of the ability of this species to produce mowing patterns, tolerance of close mowing, resistance to wear, and rapid seed germination in 4 to 7 days (Puhalla et al., 1999).

Characterized by individual components of wear, soil compaction, divoting, and soil displacement (Beard, 1973), traffic is the most frequent and damaging stress to turfgrasses used as a sports turf (Minner et al., 1993). 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). 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 primarily impart wear stress.

There is limited information in the turfgrass literature regarding the tolerance of newer perennial ryegrass cultivars to traffic stresses. Minner et al. (1993) reported on the traffic tolerance and recovery of perennial ryegrass entries comprising the 1986 NTEP Perennial Ryegrass Test using the simulator described by Cockerham and Brinkman (1989). Park et al. (2004) used a simulator (Bonos et al, 2001) and vibratory roller to apply wear and compaction stresses to the 1999 NTEP Perennial ryegrass test.

Perennial ryegrass cultivar recommendations are needed for sports fields. The objective of this study was to assess the response of perennial ryegrass to wear stress applied in September (fall) 2009.

MATERIALS AND METHODS

Evaluation Trial

The 120 entries of the 2004 NTEP perennial ryegrass trial were established in September 2004 at the Horticultural Research Farm II in North Brunswick, NJ. Entries were seeded into 3.5 ft x 5.5 ft plots at 6.8 lb seed/1000 ft^2.

Soil test results from August 2009 indicated that the soil pH was 6.0; soil phosphorus (P) and potassium

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(K) were 82 and 317 lb/acre, respectively. The test was mowed approximately 2 times per week with a reel mower at a height of 1.5-inch. The test was irrigated as necessary to avoid severe drought stress. Annual nitrogen (N) applications for 2009 totaled 1.2 lb/1000 ft^2. The experimental design was a randomized complete block design with three replications.

Wear Simulation

Wear was applied to the trial using the simulator described by Bonos et al. (2001). A total of 24 passes of the wear simulator were applied over three days (12 passes on 15 September; 6 passes on 16 September; and 6 passes on 17 September) to approximately one-half of each plot. Every other pass was made in the opposing direction of the previous pass.

Plot Evaluation

Visual turfgrass 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) was assessed on a monthly basis during the growing season from 2005 to 2008 using a 1 to 9 scale where 9 equaled the best turfgrass quality (Koch et al., 2009).

To assess perennial ryegrass response to wear, fullness of turfgrass canopy (FTC) was visually assessed using a 0 to 100% scale where 0% equaled the absence of a turfgrass canopy and 100% equaled a full canopy. The rating was taken before wear on 15 September 2009 and after 24 passes of the wear simulator on 18 September 2009. To assess recovery from wear, FTC was subsequently rated 26 and 42 days after wear (DAW). Turfgrass quality under wear stress was visually assessed on a 1 to 9 scale (9 = most dense, uniform turfgrass canopy after wear) on 18 September 2009 and 26 and 43 DAW. 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

Wear Tolerance

Perennial ryegrass cultivars and experimental selections with the highest FTC after 24 wear passes were Mach I, Silver Dollar, Plateau (PST-2LAN), Charismatic II GLSR (LTP-PGGLSR), Wind Dance 2 (PWDR), Panther GLS, Fiji (GPR), Pacesetter II (PS-2), Brightstar SLT, Citation Fore, Pick 02-R, Palmer III, Homerun (RG3P), E-99, Presidio (CNV), Grand Slam II (PST-2GSM), Hawkeye 2 (SRX 4692), Headstart 2, D04-LP05, MMW, Secretariat II GLSR (LTP-101-GLSR), and Halo (KN42) (Table 1). Silver Dollar, Charismatic II GLSR, Panther GLS, Homerun (RG3P), Grand Slam II (PST-2GSM), Hawkeye 2, MMW, and Secretariat II were among entries with the best average turfgrass quality (no wear) in 2005-2008 (Table 1).

Linn had the poorest FTC after 24 wear passes on 18 September 2009 (Table 1). Entries exhibiting FTC less than >30% after 24 wear passes were ASP6001 (RTS), Pinnacle, Ringer II (04-BEN), Sunshine 2, Affinity, Exacta II GLSR (LTP-611-GLSR), Edge II (AC2), BAR Lp 4420, Overdrive, Kokomo II (IS-PR 235), Prototype (DCM), ASP6006 (LPFG), Cabo II (IS-PR 233), La Quinta (JR-255), Repell GLS, ASP6003 (TRS), Nexus XR (SNR), and LPR 02203 (Table 1).

Recovery

Entries exhibiting the highest FTC on 29 October 2009 (42 DAW) were DP 17-9788, Plateau (PST-2LAN), Silver Dollar, Panther GLS, Pinnacle, Charismatic II GLSR (LTP-PGGLSR), Hawkeye 2 (SRX 4692), Affinity, Palmer III, Citation Fore, Secretariat II GLSR (LTP-101-GLSR), SRX 4682, E-99, ES45, Premier, Mach I, APR 1648, Manhattan II, Barlennium, Dart (APR 1663), APR 1670, Brightstar SLT, Revenge GLX (JR-348), MMW, and Galatti (DP 17-9502) (Table 1). The recovery of Pinnacle, Affinity, Premier, Barlennium, Manhattan II, APR1648, and Revenge GLX, Dart (APR 1663), DP 17-9788, ES45, SRX 4682, APR 1670, and Galatti (DP 17-9502 was notable since these were not among the top group of wear tolerant entries assessed using FTC on 18 Sept. 2009 (Table 1).

CONCLUSIONS

Differences were observed among perennial ryegrass cultivars and experimental selections when subjected to wear stress in 2009. Selection of perennial ryegrass cultivars for sports field seed blends and mixtures should strongly consider turfgrass quality, susceptibility to diseases such as gray leaf spot (caused by *Pyricularia grisea* [Cooke] Sacc.), tolerance to wear, and recovery from wear.

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Table 1. Wear tolerance and recovery of perennial ryegrass cultivars and selections subjected to wear in September 2009 in a turf trial seeded in September 2004 at North Brunswick, NJ. (Includes all entries of the 2004 National Turfgrass Evaluation Program Perennial Ryegrass Test – NTEP).

			Wear Tolerance[1]		Recovery				Turf Quality[3]
	Cultivar or Selection	No Wear 15 Sept. 2009	18 Sept. 2009	18 Sept. 2009	26 DAW[2] 13 Oct. 2009	26 DAW 13 Oct. 2009	42 DAW 29 Oct. 2009	43 DAW 30 Oct. 2009	2005-2008 Avg.
		0-100% scale[4]		1-9 scale[5]	0-100% scale	1-9 scale	0-100% scale	1-9 scale	
1	Mach I	85.0	56.7	6.0	56.7	5.7	65.0	6.0	4.6
2	Plateau (PST-2LAN)	85.0	50.0	6.0	66.7	7.3	76.7	7.7	5.2
3	Silver Dollar	91.7	50.0	6.0	61.7	6.3	76.7	7.7	6.1
4	Charismatic II GLSR (LTP-PGGLSR)	86.7	50.0	5.7	55.0	6.0	70.0	6.3	6.0
5	Wind Dance 2 (PWDR)	80.0	48.3	6.0	48.3	5.3	61.7	6.0	5.1
6	Panther GLS	90.0	48.3	5.7	63.3	6.7	75.0	8.0	6.2
7	Fiji (GPR)	80.0	48.3	5.3	46.7	5.0	58.3	5.3	5.1
8	Pacesetter II (PS-2)	81.7	46.7	6.3	46.7	5.3	60.0	5.7	4.3
9	Brightstar SLT	81.7	46.7	5.7	51.7	6.0	63.3	6.7	4.3
10	Citation Fore	85.0	46.7	5.3	51.7	5.7	68.3	7.3	5.0
11	Pick 02-R	75.0	45.0	5.7	41.7	4.0	53.3	4.7	3.9
12	Palmer III	81.7	45.0	5.0	51.7	6.0	68.3	6.7	4.1
13	Homerun (RG3P)	90.0	43.3	5.7	41.7	4.3	61.7	5.0	6.6
14	E-99	93.3	43.3	5.0	48.3	5.3	66.7	5.3	5.4
15	Presidio (CNV)	80.0	43.3	5.0	43.3	4.7	56.7	5.0	4.8
16	Grand Slam II (PST-2GSM)	88.3	43.3	4.7	38.3	3.7	58.3	5.0	6.3
17	Hawkeye 2 (SRX 4692)	95.0	41.7	5.3	51.7	5.7	70.0	7.0	6.0
18	Headstart 2	80.0	41.7	5.3	45.0	4.3	58.3	5.3	4.1
19	D04-LP05	78.3	41.7	4.7	51.7	5.0	58.3	6.3	4.4
20	MMW	86.7	41.7	4.3	46.7	5.0	63.3	5.7	6.0

(Continued)

Table 1 (cont.).

	Cultivar or Selection	No Wear 15 Sept. 2009	----Wear Tolerance[1]---- 18 Sept. 2009	18 Sept. 2009	----------Recovery---------- 26 DAW[2] 13 Oct. 2009	26 DAW 13 Oct. 2009	42 DAW 29 Oct. 2009	43 DAW 30 Oct. 2009	Turf Quality[3] 2005-2008 Avg.
		0-100% scale[4]		1-9 scale[5]	0-100% scale	1-9 scale	0-100% scale	1-9 scale	
21	Secretariat II GLSR (LTP-101-GLSR)	90.0	41.7	4.0	48.3	5.3	68.3	5.7	5.9
22	Halo (KN42)	80.0	41.7	3.7	50.0	5.0	61.7	5.3	4.4
23	PST-217	83.3	40.0	5.3	48.3	5.3	60.0	6.3	4.9
24	Fusion	83.3	40.0	5.0	43.3	4.7	61.7	4.7	5.8
25	ES45	83.3	40.0	5.0	45.0	4.7	66.7	6.0	5.1
26	Line Drive GLS (APR 1797)	95.0	40.0	5.0	45.0	4.3	58.3	5.3	6.1
27	DP 17-9788	88.3	40.0	4.7	61.7	6.7	80.0	8.0	4.0
28	SRX 4682	91.7	40.0	4.7	55.0	6.3	66.7	6.3	5.2
29	Galatti (DP 17-9502)	88.3	40.0	4.7	46.7	4.7	63.3	5.3	4.7
30	Cutter II (PM 101)	80.0	40.0	4.7	41.7	3.7	51.7	4.3	4.6
31	Regal 5 (IS-PR 271)	80.0	40.0	4.3	40.0	4.3	53.3	4.7	6.6
32	Dart (APR 1663)	86.7	40.0	4.3	43.3	4.3	65.0	6.0	6.0
33	APR 1670	78.3	40.0	4.3	43.3	4.3	65.0	6.0	5.9
34	Manhattan 5 GLR (PST-2AM)	85.0	40.0	4.3	45.0	4.0	56.7	5.7	5.7
35	Baccarat (RAD-PR8)	80.0	40.0	4.3	41.7	4.0	58.3	4.7	5.2
36	Firebolt (PRG HS-01-09)	81.7	40.0	4.3	38.3	4.0	51.7	5.7	4.4
37	Revenge GLX (JR-348)	83.3	38.3	5.3	48.3	4.7	63.3	5.7	6.3
38	Premier II	90.0	38.3	5.0	50.0	5.3	61.7	6.3	3.7
39	PST-2AG4	85.0	38.3	5.0	50.0	5.0	60.0	6.0	5.9
40	TR47	78.3	38.3	4.7	45.0	4.3	56.7	6.0	4.7

(Continued)

Table 1 (cont.).

	Cultivar or Selection	No Wear 15 Sept. 2009	----Wear Tolerance[1]---- 18 Sept. 2009	18 Sept. 2009	----------Recovery---------- 26 DAW[2] 13 Oct. 2009	26 DAW 13 Oct. 2009	42 DAW 29 Oct. 2009	43 DAW 30 Oct. 2009	Turf Quality[3] 2005-2008 Avg.
		0-100% scale[4]		1-9 scale[5]	0-100% scale	1-9 scale	0-100% scale	1-9 scale	
41	DP 17-9499	76.7	38.3	4.7	40.0	3.7	58.3	5.7	4.6
42	Paragon GLR	85.0	38.3	4.7	35.0	3.3	51.7	4.3	6.0
43	APR 1648	88.3	38.3	4.0	51.7	5.7	65.0	7.0	5.1
44	1G Squared (APR 1664)	90.0	38.3	4.0	43.3	4.7	53.3	5.7	6.1
45	Panther	90.0	38.3	4.0	43.3	4.3	60.0	5.7	3.6
46	Keystone 2 (IS-PR 312)	95.0	38.3	3.7	35.0	3.7	58.3	5.0	6.4
47	Pleasure Supreme (PM 103)	88.3	38.3	3.7	36.7	2.7	46.7	6.0	5.5
48	Wayfarer (L44)	71.7	38.3	3.3	40.0	4.0	55.0	5.3	4.6
49	SR 4600 (SRX 4SP)	90.0	36.7	4.3	35.0	3.3	56.7	4.7	6.5
50	Palmer V (RNS)	86.7	36.7	4.0	33.3	3.3	53.3	4.3	6.4
51	BAR Lp 4317	80.0	36.7	3.7	38.3	4.3	56.7	5.0	4.1
52	Gray Fox (PST-2MNG)	81.7	36.7	3.7	41.7	4.0	56.7	5.0	5.8
53	Nexus XD (SP4)	75.0	36.7	3.7	36.7	3.7	55.0	4.7	4.7
54	Manhattan II	81.7	36.7	3.3	50.0	5.3	65.0	7.3	2.7
55	Protege GLR	78.3	36.7	3.3	33.3	4.0	46.7	4.0	5.8
56	Pianist (DP 17-9505)	78.3	36.7	3.3	36.7	3.7	53.3	4.0	4.2
57	Barlennium	83.3	35.0	4.3	46.7	5.0	65.0	7.7	4.1
58	Calypso 3 (MS2)	85.0	35.0	4.3	36.7	4.0	53.3	4.7	5.4
59	Palmer IV	91.7	35.0	4.0	35.0	4.3	51.7	4.0	6.1
60	AllStar 3 (IS-PR 274)	90.0	35.0	4.0	36.7	4.0	58.3	3.7	7.0

(Continued)

Table 1 (cont.).

	Cultivar or Selection	No Wear 15 Sept. 2009	----Wear Tolerance[1]---- 18 Sept. 2009	18 Sept. 2009	----------Recovery---------- 26 DAW[2] 13 Oct. 2009	26 DAW 13 Oct. 2009	42 DAW 29 Oct. 2009	43 DAW 30 Oct. 2009	Turf Quality[3] 2005-2008 Avg.
		0-100% scale[4]		1-9 scale[5]	0-100% scale	1-9 scale	0-100% scale	1-9 scale	
61	Primary (IS-PR 312)	88.3	35.0	4.0	33.3	3.7	48.3	4.0	6.4
62	Zoom (LCK)	81.7	35.0	3.7	38.3	4.0	56.7	4.0	6.7
63	Pinnacle II	91.7	35.0	3.7	40.0	3.7	55.0	4.3	4.8
64	Top Gun II (JR-324)	80.0	35.0	3.7	40.0	3.7	58.3	4.7	4.6
65	Defender (D04-UP)	73.3	35.0	3.7	33.3	3.0	48.3	4.3	6.0
66	ASP6002 (BPR)	70.0	35.0	3.3	40.0	4.7	55.0	5.0	5.1
67	Brea (04-BRE)	78.3	33.3	4.3	36.7	4.7	56.7	6.0	5.2
68	ASP6005 (AJM)	70.0	33.3	4.0	38.3	4.3	53.3	5.0	5.2
69	Accent II (JR-119)	85.0	33.3	4.0	41.7	4.3	60.0	5.7	4.7
70	Caddieshack II (JR-163)	78.3	33.3	3.7	40.0	4.0	53.3	4.0	3.9
71	Stellar GL (IS-PR 236)	86.7	33.3	3.7	33.3	3.7	50.0	4.3	5.5
72	Goalkeeper II (JR-114)	70.0	33.3	3.7	36.7	3.7	56.7	4.3	3.9
73	BAR Lp 4920	85.0	33.3	3.0	45.0	4.7	58.3	6.3	4.0
74	Buena Vista	81.7	33.3	3.0	41.7	4.0	56.7	5.0	5.5
75	Palmer GLS (GL-2)	90.0	33.3	3.0	36.7	3.7	51.7	4.3	6.2
76	Notable (AF)	88.3	33.3	3.0	35.0	3.7	50.0	4.7	6.1
77	ASP6004 (EXS54)	73.3	33.3	3.0	33.3	3.7	51.7	4.7	5.5
78	Uno (D04-11T)	93.3	33.3	3.0	36.7	3.0	45.0	3.7	6.7
79	Transformer (D04-1667)	90.0	33.3	2.7	38.3	3.3	53.3	5.0	6.1
80	Soprano (DP1)	73.3	31.7	4.0	36.7	3.3	53.3	4.7	6.0

(Continued)

Table 1 (cont.).

	Cultivar or Selection	No Wear 15 Sept. 2009	----Wear Tolerance[1]---- 18 Sept. 2009	18 Sept. 2009	----------Recovery---------- 26 DAW[2] 13 Oct. 2009	26 DAW 13 Oct. 2009	42 DAW 29 Oct. 2009	43 DAW 30 Oct. 2009	Turf Quality[3] 2005-2008 Avg.
		0-100% scale[4]		1-9 scale[5]	0-100% scale	1-9 scale	0-100% scale	1-9 scale	
81	Monterey 3 (JR-408)	66.7	31.7	3.7	48.3	5.0	58.3	5.3	4.0
82	Derby Xtreme (IS-PR 268)	80.0	31.7	3.7	31.7	3.3	43.3	3.0	6.6
83	Gray Star (PST-2LGL)	88.3	31.7	3.7	35.0	3.3	53.3	5.0	5.3
84	Harrier (SRX 4UP3)	85.0	31.7	3.3	38.3	4.3	51.7	4.0	6.1
85	Amazing GS (IS-PR 276)	93.3	31.7	3.3	31.7	3.3	48.3	3.3	6.8
86	Inspire	90.0	31.7	3.3	36.7	3.3	55.0	5.0	4.5
87	Apple GL (AAZ-B104)	86.7	31.7	3.3	31.7	2.3	48.3	4.0	6.3
88	Premier	75.0	31.7	3.0	43.3	4.3	66.7	5.7	3.8
89	Delaware XL (Pick 01-2)	88.3	31.7	3.0	36.7	4.0	56.7	4.7	5.3
90	PM 102	85.0	31.7	2.7	31.7	3.7	51.7	4.7	4.2
91	Attribute (IS-PR 270)	86.7	31.7	2.7	30.0	2.7	43.3	3.0	6.5
92	Dasher 3 (Pick RB-1)	81.7	31.7	2.7	28.3	2.7	41.7	3.0	6.5
93	Pentium	83.3	31.7	2.3	38.3	3.3	51.7	5.0	5.0
94	VB99	60.0	31.7	2.3	28.3	3.0	45.0	3.3	4.4
95	Pizzazz	83.3	30.0	4.0	35.0	4.3	51.7	4.3	4.8
96	Phenom (APR 1660)	75.0	30.0	3.7	31.7	3.0	50.0	4.3	5.5
97	Quicksilver	78.3	30.0	3.3	30.0	3.3	46.7	4.0	4.6
98	PST-2BLK	90.0	30.0	3.0	31.7	3.3	48.3	4.0	5.2
99	Fiesta 4 (Pick F4)	85.0	30.0	3.0	28.3	2.7	50.0	4.0	6.5
100	Majesty II (VB77)	70.0	30.0	2.7	38.3	4.7	53.3	5.0	4.9

(Continued)

Table 1 (cont.).

	Cultivar or Selection	No Wear 15 Sept. 2009	----Wear Tolerance[1]---- 18 Sept. 2009	18 Sept. 2009	----------Recovery---------- 26 DAW[2] 13 Oct. 2009	26 DAW 13 Oct. 2009	42 DAW 29 Oct. 2009	43 DAW 30 Oct. 2009	Turf Quality[3] 2005-2008 Avg.
		0-100% scale[4]		1-9 scale[5]	0-100% scale	1-9 scale	0-100% scale	1-9 scale	
101	Palace (IS-PR 273)	91.7	30.0	2.7	28.3	3.0	43.3	2.7	6.5
102	ASP6001 (RTS)	83.3	28.3	3.3	33.3	3.7	48.3	4.3	4.6
103	Pinnacle	81.7	28.3	3.0	58.3	6.7	73.3	8.7	3.1
104	Affinity	71.7	28.3	2.7	45.0	5.3	70.0	7.7	3.7
105	Sunshine 2	75.0	28.3	2.7	31.7	3.0	48.3	4.3	3.7
106	Ringer II (04-BEN)	80.0	28.3	2.7	30.0	2.3	43.3	3.7	5.0
107	BAR Lp 4420	80.0	28.3	2.3	36.7	3.7	53.3	5.0	4.3
108	Exacta II GLSR (LTP-611-GLSR)	88.3	28.3	2.3	30.0	3.0	43.3	4.3	6.4
109	Edge II (AC2)	68.3	28.3	2.3	31.7	2.0	50.0	3.7	5.1
110	Overdrive	66.7	26.7	3.3	31.7	3.7	51.7	4.0	5.2
111	Prototype (DCM)	78.3	26.7	3.0	25.0	3.0	46.7	3.3	5.9
112	Kokomo II (IS-PR 235)	85.0	26.7	3.0	23.3	2.3	40.0	2.7	6.4
113	ASP6006 (LPFG)	68.3	26.7	2.7	30.0	3.7	45.0	4.3	5.2
114	Cabo II (IS-PR 233)	66.7	25.0	2.7	30.0	2.3	46.7	3.3	5.4
115	La Quinta (JR-255)	71.7	25.0	2.0	31.7	3.7	46.7	4.0	4.1
116	Repell GLS	65.0	23.3	2.7	30.0	3.3	48.3	4.0	5.4
117	ASP6003 (TRS)	83.3	23.3	2.7	30.0	2.7	43.3	3.0	5.1
118	Nexus XR (SNR)	63.3	21.7	2.7	21.7	2.3	40.0	2.7	4.7
119	LPR 02203	75.0	21.7	2.3	41.7	5.3	58.3	6.0	2.9
120	Linn	46.7	5.0	1.0	11.7	1.0	41.7	4.0	1.1
	LSD at 5% =	16.0	16.5	2.7	19.5	2.6	17.4	2.5	0.7

(Continued)

Table 1 (cont.).

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[1]Wear tolerance rated after 24 wear passes
[2]DAW = days after wear
[3]Quality assessed in the absence of wear; 9 = best turf quality
[4]Fullness of turfgrass canopy using a 0 to 100% scale (0 = absence of a turfgrass canopy to 100 = full canopy)
[5]Turf quality under wear stress rated on a 1 to 9 scale where 9 = fullest turfgrass canopy and most uniform ground cover after wear