Tall Fescue Simulated Traffic Cultivar Trial

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Introduction
This is the 2020 data from tall fescue (*Schedonorus arundinaceus* Schreb.) subjected to simulated athletic field traffic conditions during August and early September. This is a National Turfgrass Evaluation Program (NTEP) ancillary trial, and is being conducted at one other research station in the United States. It contains 132 seeded cultivars, including a number of new experimental cultivars. Iowa State University, Horticulture Research Station, Ames, Iowa, is home to both a traffic tolerance and shade setting of this trial.

Materials and Methods
The trial was planted September 18, 2018. Plots are 4 ft by 5 ft in size, and all cultivars are replicated three times. Supplemental irrigation was provided during establishment and a starter fertilizer (10-10-10) was applied at seeding providing 1 lb nitrogen (N)/1,000 ft^2. Fertility was applied at 0.5 lb N/1,000 ft^2 monthly (April- October) using a 28-0-3 granular fertilizer. The mowing height is 3 inches. Simulated athletic field traffic will be applied in three of the five years the study is being conducted. A modified Baldree Athletic Field Traffic Simulator was used to simulate athletic field traffic.

Digital images were taken monthly April to November. Digital images were captured with the use of a light box to ensure a consistent lighting and digital camera. Images were scanned using Turf Analyzer for percent green cover (1-100% cover), color (1 = light green color and 9 = dark green color), and turfgrass quality (1 = poor and 6 = acceptable quality). Visual ratings also were taken during this time period, but not presented here.

Results and Discussion
Significant differences existed between cultivars for percent cover, color (data not shown), and quality (data not shown) for all rating dates. Those in August and September are under simulated traffic, and those in October and November are for recovery from traffic.

The values listed under each month in Table 1 are the averages of the percent green cover. The last row states the Fisher's LSD (least significant difference), which is a statistical measurement of how widely the data in each column must vary before these are considered to be different from one another.

Acknowledgements

Table 1. Monthly percent green cover ratings for tall fescue cultivars subjected to fall simulated athletic field traffic, Ames, Iowa.

Cultivars	Percent green cover[a]							
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Naturally Green	65.3	92.7	93.7	96.7	36.3	40.7	75.7	67.7
Paramount	70.0	86.7	95.7	97.0	57.0	51.0	87.7	77.0
DLFPS-321/3693	72.0	98.0	97.3	95.7	37.3	42.7	71.3	69.3
DLFPS-321/3694	68.3	96.7	96.3	96.0	45.3	44.3	81.3	72.7
DLFPS-321/3695	75.3	96.7	96.7	94.7	67.0	64.3	88.0	81.3
TMT1	73.3	92.3	94.0	96.3	40.3	35.3	61.3	58.3
ATF2116	64.7	94.0	91.3	96.0	43.0	47.3	74.0	64.0
NT-3	74.3	97.0	96.0	97.3	54.3	51.7	81.0	78.0
RS1	69.0	96.0	97.3	89.3	48.0	43.3	81.0	69.0
5LSS	61.0	87.0	92.0	96.7	40.7	38.3	62.3	62.7
BGR-TF3	75.0	95.7	93.3	96.3	55.7	57.7	80.7	62.7
ATF 1768	66.3	91.3	94.7	99.0	42.7	42.3	69.0	55.7
DLFPS-TF/3550	62.3	89.3	90.3	96.7	22.0	18.7	47.3	46.7
DLFPS-TF/3552	73.0	95.0	96.0	98.0	42.0	38.0	73.3	69.0
DLFPS-TF/3553	68.7	94.7	96.3	96.0	50.7	51.3	78.0	66.0
DLFPS-321/3679	54.7	86.7	94.0	97.3	31.7	33.3	68.0	60.0
LBF	67.0	94.3	92.7	96.7	46.0	43.0	77.7	68.3
TD2	66.0	91.3	96.0	96.0	54.7	48.0	82.3	73.7
DLFPS-321/3696	66.7	91.0	91.7	95.0	61.7	58.3	81.3	75.7
DLFPS-321/3699	70.0	96.7	95.3	97.0	45.7	46.0	84.7	78.0
Grande 3	71.0	96.0	97.7	95.0	45.7	39.3	77.7	70.0
Fayette	75.3	98.0	96.7	98.0	50.0	48.7	87.0	72.3
JT-517	62.7	92.7	94.3	98.0	34.3	38.0	67.3	58.3
JS-DTT	60.0	90.3	97.0	93.3	37.7	38.3	73.0	62.7
RDC	60.7	90.7	95.7	97.0	35.3	39.7	63.0	53.3
BAR 9FE MAS	56.0	83.0	76.0	95.7	40.7	41.3	76.0	65.0
BAR FA 8228	63.0	89.3	90.3	97.0	54.7	60.0	87.0	74.0
COL-TF-148	69.0	93.3	93.7	97.3	42.7	34.0	73.3	71.7
LTP-TF-122	68.0	95.0	97.0	96.7	48.3	45.7	75.3	71.3
LTP-TF-111	62.3	92.0	91.0	98.3	57.7	56.0	79.7	71.3
K18-ROE	69.7	94.7	96.7	96.3	54.3	43.0	82.0	74.3
K18-NSE	51.7	78.3	88.3	96.7	35.0	34.7	58.0	61.7
BY-TF-169	63.3	86.0	92.0	91.0	42.0	28.7	64.7	63.3
DLFPS-321/3701	63.3	92.0	95.3	94.7	27.7	16.3	49.7	44.3
DLFPS-321/3702	58.7	91.0	94.3	96.3	47.7	44.0	70.7	68.3
DLFPS-321/3703	71.0	96.0	97.7	90.3	53.0	53.0	87.0	79.0
PST-5TRN	67.5	93.5	93.3	97.3	43.8	39.8	75.8	64.0
PST-5GQ	61.0	90.3	92.0	96.7	36.7	41.7	64.3	62.7
PST-5MCMO	62.5	90.5	91.0	96.0	40.5	39.0	74.5	62.0
ProGold	60.0	96.0	93.3	95.3	48.3	44.7	77.0	68.0
PST-5E6	62.7	90.3	84.7	97.0	48.0	44.7	76.0	70.0
PST-5THM	63.0	96.7	95.0	96.3	56.3	59.3	84.3	75.7
PST-5BYOB	64.0	91.3	95.3	96.0	38.7	42.3	70.3	67.7
Lifeguard	64.3	92.3	93.7	99.0	44.7	40.3	77.7	70.3
PST-5MINK	65.3	87.7	91.0	92.0	40.3	36.3	72.0	64.3
Moondance	60.0	91.0	93.0	98.3	53.7	47.7	73.7	64.3
PST-5SQB	62.3	82.7	96.0	94.7	35.7	45.0	71.0	56.0
PST-5DZM	52.3	86.7	92.0	97.3	56.7	48.0	78.0	70.7
PST-5GLBS	68.3	90.3	93.3	96.0	42.0	48.0	75.0	70.0

Table 1 (continued). Monthly percent green cover ratings for tall fescue cultivars subjected to fall simulated athletic field traffic, Ames, Iowa.

Cultivars	Percent green cover[a]							
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
PST-5DART	61.7	92.0	96.7	91.0	57.3	49.0	78.7	65.3
PST-5DC24	58.7	86.3	87.3	93.7	36.7	31.7	67.7	59.0
Tango	58.7	89.7	82.0	97.7	39.0	40.0	79.0	71.7
3N1	69.5	87.5	91.5	95.5	41.0	38.5	67.0	59.0
Bandit	69.0	89.3	93.0	97.7	38.3	34.3	57.7	54.7
Copious TF	63.0	86.3	88.0	97.0	35.3	39.7	60.3	55.7
Padre 2	74.0	95.0	95.0	97.0	62.0	53.0	89.7	80.3
Bravo 2	57.3	90.0	91.8	95.3	40.5	35.0	60.0	53.5
NAI-FQZ-17	62.7	86.7	77.7	96.3	41.3	39.7	62.7	64.3
DLFPS-321/3705	65.7	90.0	95.3	96.7	50.0	54.3	76.0	70.0
DLFPS-321/3706	61.3	88.7	94.7	90.7	32.7	39.0	75.3	66.7
DLFPS-321/3707	53.0	79.0	86.7	97.0	48.7	40.0	81.3	69.7
DLFPS-321/3708	53.3	81.7	93.7	82.7	41.7	47.7	77.0	65.7
BAR-TF-134	66.7	90.3	95.0	97.3	58.7	54.3	81.7	75.0
BAR-FA8230	52.3	85.7	84.0	95.7	56.7	60.0	77.7	65.3
AH1	66.0	93.7	97.3	97.0	48.7	39.7	75.3	69.7
PPG-TF-249	70.0	93.0	97.3	91.0	47.7	43.7	80.0	76.3
PPG-TF-262	62.0	91.7	96.7	92.7	50.0	43.7	79.3	68.3
PPG-TF-267	52.3	83.3	95.3	98.0	34.7	27.7	59.3	55.3
AH2	58.0	88.7	97.0	98.0	46.7	45.0	80.3	74.0
K18-RS6	60.7	90.3	95.3	92.7	48.7	50.7	81.7	75.0
K18-WB1	63.0	81.3	89.3	96.3	39.3	39.3	77.0	68.3
RH1	64.0	88.0	92.7	97.0	55.0	52.7	82.3	75.0
RH3	66.7	92.7	97.0	85.7	40.3	33.0	69.0	69.0
JT 233	62.0	93.7	96.0	94.3	38.3	41.3	72.7	68.3
JT 268	63.3	87.3	94.3	98.0	41.0	41.3	73.7	66.3
PPG-TF 244	65.0	88.0	88.0	96.0	38.0	44.3	75.3	72.3
PPG-TF 305	51.7	80.7	90.0	96.3	42.0	39.3	59.3	54.3
PPG-TF 316	62.7	91.3	89.3	95.7	41.3	33.7	70.3	62.7
RC4	68.0	91.0	92.7	97.0	38.3	34.3	73.3	67.0
PPG-TF-257	70.7	95.3	94.7	97.3	41.0	42.0	77.0	69.3
PPG-TF-238	55.5	87.0	95.5	97.3	41.8	37.3	68.5	62.8
PPG-TF-254	70.0	94.7	97.3	97.0	49.7	38.3	78.0	69.0
PPG-TF-308	66.0	94.7	96.7	97.7	47.7	38.0	79.3	79.0
PPG-TF-255	70.0	89.3	94.0	93.3	43.7	37.7	80.0	71.0
PPG-TF-312	67.3	89.0	96.7	93.7	50.0	48.0	79.7	74.7
PPG-TF-315	64.0	94.0	95.7	96.3	55.3	50.7	82.0	72.0
PPG-TF-336	69.5	95.5	98.0	97.5	50.0	42.5	78.0	74.0
PPG-TF-337	48.0	77.0	89.3	94.3	52.0	46.7	79.0	66.3
ZRC1	62.0	89.7	93.7	98.0	56.3	53.0	83.0	75.7
PPG-TF-231	62.0	89.3	96.7	98.3	52.0	42.7	73.7	59.7
PPG-TF-306	56.0	88.0	95.0	92.0	54.3	46.3	77.0	61.0
PPG-TF-318	59.3	90.3	97.0	96.7	65.0	73.0	87.7	76.3
Bullseye	51.3	83.3	91.7	96.7	53.0	54.3	85.3	81.3
Firehawk SLT	62.0	93.7	95.0	97.7	53.0	60.0	84.7	78.7
Hemi	70.0	95.3	95.3	96.7	44.3	46.3	80.7	69.0
Bullseye LTZ	70.3	93.7	97.3	97.0	56.7	58.7	86.7	80.0
Turbo SS	54.7	88.0	91.3	95.7	40.3	48.3	74.7	60.3
Dragster	63.7	90.3	96.0	96.3	31.3	28.0	60.3	60.3
GO-RH20	74.0	96.3	94.7	95.7	67.0	62.7	92.7	86.7
Burmingham	71.7	98.0	95.0	93.0	48.3	43.7	76.7	67.0
GO-AOMK	55.7	85.0	93.0	97.3	43.7	41.3	75.3	67.0

Table 1 (continued). Monthly percent green cover ratings for tall fescue cultivars subjected to fall simulated athletic field traffic, Ames, Iowa.

Cultivars	Percent green cover[a]							
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
NAI-3N2	64.3	94.0	97.7	97.0	48.3	51.0	77.0	68.0
NAI-ROS4	49.3	71.0	82.3	94.7	44.7	41.7	73.0	75.3
NAI-TUE	57.7	87.7	92.3	90.7	48.3	42.0	77.3	71.0
NAI-ST5	56.7	84.0	82.7	95.7	35.3	30.0	71.0	65.0
SE5302	68.3	94.7	95.0	96.7	65.3	68.7	92.3	82.0
SE5STAR	64.0	92.0	95.3	97.0	66.7	67.7	87.3	76.7
SE5CR1	63.7	81.0	91.7	97.0	31.0	29.3	59.3	55.3
SETF104	61.7	89.3	94.0	98.7	44.3	43.7	74.3	54.7
SETFM2	59.7	91.0	93.0	96.0	43.0	47.0	76.0	64.7
SETFM3	61.0	89.7	93.0	96.0	38.3	37.7	76.3	70.3
3B2	65.3	92.7	96.3	97.3	40.7	27.0	64.3	57.0
RAD--TF105	53.0	81.3	93.7	97.7	39.3	35.7	68.7	62.0
RAD-TF0.0	56.0	88.0	95.0	96.3	48.3	50.0	76.7	65.7
RHL2	54.7	77.3	91.3	97.0	44.3	42.3	72.3	65.3
Raptor III	57.7	89.7	95.7	97.7	38.0	37.0	71.7	64.0
RHF	74.7	98.0	98.3	98.3	59.3	57.0	80.0	72.7
PPG-TF-313	63.0	95.3	97.3	94.7	51.3	47.7	73.0	66.0
PPG-TF-320	67.3	97.3	99.0	98.7	51.0	57.3	87.3	79.7
PPG-TF-323	63.3	93.0	97.3	95.3	35.7	32.7	68.0	59.0
PPG-TF-338	72.3	96.7	96.3	91.7	62.0	54.7	83.3	75.3
Estrena	58.3	75.0	85.7	92.7	35.7	32.0	68.3	60.3
AST8118LM	69.3	95.3	94.3	94.3	55.3	56.0	82.0	69.3
AST8218LM	64.7	93.0	96.0	94.0	41.7	33.0	68.0	57.3
A-TF31	62.3	93.7	96.0	96.7	52.7	54.0	76.3	59.7
Palomar	56.7	82.7	85.0	96.0	40.0	48.0	74.3	66.0
Escalade	73.7	98.3	96.3	93.7	38.3	34.0	68.7	61.0
OG-WALK	70.7	96.0	95.0	95.0	60.3	55.0	80.0	68.0
TF445	73.0	97.7	96.7	97.7	55.0	53.0	84.0	76.7
TF456	73.0	97.7	97.0	94.7	52.7	52.3	81.3	80.0
FC15-01P	61.3	93.3	96.0	87.7	47.3	43.3	64.3	57.7
Kentucky-31	64.7	90.3	89.7	97.7	40.3	41.7	62.0	56.3
LSD (0.05)[b]	15.2	13.0	9.4	6.8	26.3	28.0	23.9	20.2

[a]Percent green cover is the average quality rated monthly with digital image analysis on a 0-100 scale.
[b]Means were separated using Fisher's LSD.