

Tall Fescue Non-Traffic Cultivar Trial

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Introduction

This is the 2020 data from tall fescue (*Schedonorus arundinaceus* Schreb.) not subjected to simulated athletic field traffic, but in full sun. This is a standard National Turfgrass Evaluation Program (NTEP) ancillary trial, and is being conducted at several research stations 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/1,000 ft². The mowing height is three inches. Fertility was applied at 0.5 lb N/1,000 ft² monthly (April-October) using a 28-0-3 granular fertilizer. Simulated athletic field traffic is applied in three of the five years to the other part of the study 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 TurfAnalyzer 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. None of these plots saw simulated 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

Appreciation is extended to the NTEP organization for funding to conduct this project. Special appreciation also is given to Simon Mitbo, Ethan DenBeste, Nate Underwood, and Colin Laswell for their help on plot maintenance, traffic simulation, and data collection.

Table 1. Percent green cover ratings for the tall fescue non-traffic cultivar trial, Ames, Iowa.

Cultivars	Percent green cover ^a							
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Naturally Green	83.7	98.3	94.3	98.3	84.0	95.3	91.0	86.3
Paramount	84.7	99.0	97.0	97.0	81.7	96.3	94.0	92.0
DLFPS-321/3693	89.7	99.0	97.7	97.0	85.3	96.7	96.0	90.7
DLFPS-321/3694	93.3	98.7	95.7	98.3	74.7	87.0	94.3	93.3
DLFPS-321/3695	88.0	93.0	96.0	96.0	87.7	97.3	91.3	92.3
TMT1	87.0	98.7	95.3	99.3	83.7	93.7	95.7	91.3
ATF2116	83.0	97.3	92.7	96.0	86.0	96.0	92.3	85.0
NT-3	90.7	97.3	97.0	98.7	87.0	97.7	94.0	92.7
RS1	92.0	99.0	96.0	97.7	87.7	94.7	89.7	89.0
5LSS	90.7	99.3	95.7	98.3	84.3	92.3	97.3	95.7
BGR-TF3	87.3	95.7	91.3	98.7	74.3	95.3	95.7	87.7
ATF 1768	79.7	98.7	93.3	98.0	78.3	93.0	94.7	87.7
DLFPS-TF/3550	88.7	99.0	94.7	98.0	85.3	91.3	96.7	91.7
DLFPS-TF/3552	90.7	98.7	95.7	98.7	81.7	95.7	88.0	89.3
DLFPS-TF/3553	86.7	99.0	96.3	97.3	84.3	97.0	92.0	88.3
DLFPS-321/3679	79.3	98.0	95.0	98.3	73.7	96.3	89.3	83.7
LBF	87.7	98.3	94.0	97.3	83.7	95.3	94.0	85.3
TD2	90.7	98.0	96.7	97.0	89.3	98.0	82.7	86.7
DLFPS-321/3696	88.3	98.3	95.7	98.0	89.0	96.7	92.3	92.0
DLFPS-321/3699	81.0	98.7	96.7	98.0	86.7	97.7	96.0	92.7
Grande 3	86.0	98.3	96.0	98.3	88.7	95.7	96.7	89.3
Fayette	90.7	99.0	96.3	98.3	77.0	95.7	95.3	85.3
JT-517	77.7	98.0	92.0	98.3	81.0	93.0	93.0	87.0
JS-DTT	83.3	99.0	97.0	98.7	81.7	97.3	96.0	92.3
RDC	90.3	99.0	96.3	98.0	90.3	96.0	96.0	91.7
BAR 9FE MAS	91.0	98.7	92.0	96.7	78.0	95.0	93.3	89.0
BAR FA 8228	83.7	97.7	93.0	98.0	72.0	96.0	92.7	87.3
COL-TF-148	92.3	99.0	96.0	98.7	79.3	95.3	96.3	93.0
LTP-TF-122	90.7	99.3	95.0	96.3	86.0	92.0	94.0	91.0
LTP-TF-111	93.3	98.7	97.7	98.3	81.0	96.3	94.3	91.3
K18-ROE	88.3	99.0	95.0	97.3	91.0	94.7	79.7	82.3
K18-NSE	95.3	99.3	96.0	95.7	73.0	92.0	97.7	95.3
BY-TF-169	86.0	99.0	97.3	92.3	82.3	91.3	80.3	85.7
DLFPS-321/3701	87.0	99.0	96.0	97.7	78.3	95.7	93.0	90.0
DLFPS-321/3702	84.3	98.7	93.7	98.7	75.0	94.7	85.7	91.7
DLFPS-321/3703	83.3	98.7	95.3	94.0	72.0	98.0	93.0	91.0
PST-5TRN	83.3	98.3	97.0	96.0	84.7	96.3	95.7	89.3
PST-5GQ	80.0	97.3	93.0	98.0	79.0	95.3	93.3	88.3
PST-5MCMO	88.3	99.0	94.3	97.7	74.0	96.0	88.7	86.0
ProGold	89.3	98.7	97.0	96.7	90.7	97.3	95.7	92.0
PST-5E6	85.3	98.3	94.7	98.0	80.7	95.7	95.7	92.0
PST-5THM	77.7	98.0	94.7	97.0	84.3	98.7	94.3	90.3
PST-5BYOB	84.7	99.0	96.3	98.3	80.3	96.3	94.3	90.7
Lifeguard	87.3	98.7	97.7	98.7	89.0	98.0	97.3	93.3
PST-5MINK	72.3	98.0	93.0	96.7	84.0	94.3	92.0	83.7
Moondance	78.7	98.7	95.7	98.7	86.7	96.7	94.3	87.3
PST-5SQB	76.0	98.7	95.7	95.7	93.3	96.7	95.7	92.0
PST-5DZM	72.7	98.0	93.7	97.7	79.3	96.3	92.7	87.0
PST-5GLBS	88.0	98.3	96.0	96.7	80.0	96.7	94.0	93.0
PST-5DART	79.7	98.7	95.7	97.3	86.3	97.0	90.0	88.7
PST-5DC24	74.0	98.0	93.7	96.3	80.0	94.7	92.0	84.3

Table 1 (continued). Percent green cover ratings for the tall fescue non-traffic cultivar trial, Ames, Iowa.

Cultivars	Percent green cover ^a							
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Tango	83.7	99.0	93.3	98.3	76.7	95.0	87.3	85.7
3N1	83.7	98.0	95.3	96.3	78.0	96.3	90.7	89.7
Bandit	82.7	94.3	89.3	97.3	77.0	96.7	93.3	88.3
Copious TF	80.0	98.7	93.7	96.0	85.7	96.7	88.7	86.0
Padre 2	90.0	97.0	96.3	96.7	92.3	96.0	94.7	92.3
Bravo 2	88.3	98.0	92.7	97.3	80.3	94.7	84.0	81.0
NAI-FQZ-17	81.3	98.0	93.0	98.0	74.3	94.7	81.7	78.3
DLFPS-321/3705	88.7	98.3	98.0	97.7	86.3	97.0	95.3	93.3
DLFPS-321/3706	89.3	98.3	87.0	96.7	83.3	95.7	86.0	93.7
DLFPS-321/3707	85.7	97.7	91.0	98.0	87.0	96.0	83.3	84.0
DLFPS-321/3708	77.7	98.7	96.7	96.0	81.3	95.0	74.0	78.7
BAR-TF-134	92.3	99.0	96.3	96.7	66.3	95.3	93.3	88.0
BAR-FA8230	83.0	98.7	95.7	98.3	92.7	95.7	94.0	89.3
AH1	94.7	99.3	98.0	99.0	82.7	96.3	97.3	95.3
PPG-TF-249	86.0	98.7	96.7	96.7	85.0	96.3	95.7	91.0
PPG-TF-262	88.0	99.0	97.0	98.7	84.3	95.3	95.7	91.7
PPG-TF-267	81.0	99.0	97.0	99.0	85.0	96.7	94.0	84.7
AH2	88.7	99.3	97.3	98.0	88.3	97.0	88.7	87.7
K18-RS6	88.0	99.7	95.7	93.7	89.3	96.0	88.0	92.0
K18-WB1	92.3	98.7	98.0	96.3	85.3	96.7	92.0	92.3
RH1	90.0	98.3	96.3	97.0	75.7	96.7	94.7	93.3
RH3	83.7	98.7	94.3	92.3	81.0	96.0	87.3	81.7
JT 233	82.3	99.0	97.7	96.3	72.0	96.0	92.3	88.3
JT 268	83.0	98.3	97.3	98.3	84.3	97.0	92.3	91.3
PPG-TF 244	93.7	99.3	97.0	98.0	72.7	96.7	91.3	90.3
PPG-TF 305	86.7	98.7	95.0	98.3	78.0	96.3	94.0	90.3
PPG-TF 316	87.0	98.0	96.7	97.7	76.7	95.0	92.7	86.0
RC4	86.0	97.3	95.3	98.3	80.3	96.0	90.7	91.7
PPG-TF-257	91.3	98.7	96.0	98.0	73.3	95.7	89.7	85.7
PPG-TF-238	82.3	99.0	96.3	97.3	86.3	96.0	88.0	86.7
PPG-TF-254	87.0	98.3	92.3	97.0	84.7	93.7	94.3	85.0
PPG-TF-308	81.3	92.7	90.0	97.7	83.3	97.7	83.7	82.7
PPG-TF-255	81.3	97.7	95.7	94.0	85.3	96.7	95.3	90.7
PPG-TF-312	93.3	99.3	96.7	97.0	75.3	96.0	86.3	93.0
PPG-TF-315	82.7	98.3	97.7	99.0	73.3	97.0	94.3	90.0
PPG-TF-336	91.3	91.3	96.3	97.7	88.3	96.3	95.7	89.3
PPG-TF-337	81.3	99.0	97.0	97.7	73.0	97.7	89.3	88.7
ZRC1	87.7	99.0	97.7	98.0	87.7	97.0	97.0	92.0
PPG-TF-231	76.0	98.7	97.0	99.7	84.7	97.3	95.0	89.3
PPG-TF-306	82.7	99.0	97.0	97.0	86.7	97.3	85.7	82.0
PPG-TF-318	87.3	98.7	97.0	98.3	79.0	97.7	89.3	90.0
Bullseye	76.7	96.7	97.0	96.3	88.0	96.0	84.3	89.0
Firehawk SLT	80.7	99.0	95.7	98.0	83.3	97.3	95.0	93.0
Hemi	80.0	98.7	91.0	97.0	82.3	97.7	95.7	90.0
Bullseye LTZ	84.3	99.0	97.0	98.0	82.7	97.3	95.3	91.7
Turbo SS	68.7	96.7	94.3	97.7	79.7	95.7	88.7	81.3
Dragster	91.0	99.3	94.7	97.7	76.7	95.0	89.7	91.0
GO-RH20	86.3	98.0	96.0	97.7	85.0	96.0	95.0	90.7
Birmingham	86.0	98.3	96.0	98.7	72.0	97.0	86.0	80.7
GO-AOMK	69.0	97.7	96.3	96.3	85.7	96.3	85.0	85.0
NAI-3N2	83.0	99.0	96.7	98.0	90.7	97.3	92.7	87.3
NAI-ROS4	87.3	98.3	95.7	98.0	90.0	97.0	96.7	94.7
NAI-TUE	75.3	99.0	95.0	98.7	83.7	96.7	90.7	86.3

Table 1 (continued). Percent green cover ratings for the tall fescue non-traffic cultivar trial, Ames, Iowa.

Cultivars	Percent green cover ^a							
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
NAI-ST5	87.0	98.3	95.7	95.0	83.7	96.0	92.3	90.7
SE5302	87.0	98.7	97.3	97.3	84.0	98.3	94.7	90.3
SE5STAR	75.7	99.0	96.0	98.3	89.3	96.7	96.3	89.7
SE5CR1	92.7	99.0	97.7	98.7	84.3	96.7	92.3	91.7
SETF104	83.3	98.0	96.0	94.0	84.0	96.3	96.7	88.7
SETFM2	76.3	98.0	95.0	96.7	83.3	95.3	93.0	85.7
SETFM3	83.3	97.7	95.0	95.0	79.0	95.0	86.3	85.7
3B2	87.7	94.7	94.7	98.0	65.0	96.0	91.7	87.3
RAD--TF105	75.0	98.7	90.7	98.7	85.7	95.7	93.3	88.7
RAD-TF0.0	74.3	97.0	95.0	98.3	77.0	86.3	95.3	85.0
RHL2	85.7	99.0	97.3	97.3	81.3	97.3	90.0	93.0
Raptor III	87.0	98.3	96.7	99.0	88.0	93.3	91.0	90.7
RHF	87.7	99.3	97.0	96.7	85.7	94.3	93.0	85.7
PPG-TF-313	91.7	99.3	98.3	95.7	80.3	96.0	80.3	91.0
PPG-TF-320	88.3	99.0	97.0	98.0	84.7	97.7	93.3	91.7
PPG-TF-323	85.0	99.0	97.3	96.7	78.3	96.3	91.7	88.0
PPG-TF-338	86.7	98.7	97.7	97.0	77.0	95.0	92.7	86.7
Estrena	90.7	99.3	96.0	91.3	89.0	95.3	93.3	88.7
AST8118LM	81.7	98.0	93.3	94.7	86.3	96.3	90.7	85.7
AST8218LM	80.7	98.0	94.3	95.7	89.0	97.0	88.0	81.7
A-TF31	85.7	99.0	96.7	98.3	71.3	96.0	90.7	79.7
Palomar	78.3	98.0	94.3	92.0	89.7	96.7	87.0	87.0
Escalade	92.7	98.3	96.3	97.3	82.7	96.7	90.3	88.7
OG-WALK	83.3	98.0	91.0	94.7	85.3	92.0	90.0	84.7
TF445	87.7	99.0	97.0	94.7	82.0	95.3	93.7	88.3
TF456	87.0	99.0	96.7	97.3	78.7	97.0	95.7	93.3
FC15-01P	76.3	97.7	94.3	96.7	90.0	97.0	92.7	86.7
Kentucky-31	90.7	99.0	98.0	98.7	91.0	96.3	94.3	87.7
LSD (0.05)^b	10.3	3.5	5.0	4.0	14.3	5.2	10.8	8.0

^aPercent green cover is the average quality rated monthly with digital image analysis on a 0-100 scale.

^bMeans were separated using Fisher's LSD.