

# Tall Fescue Simulated Traffic Cultivar Evaluation Trial

## RFR-A1807

Adam Thoms, assistant professor  
Ben Pease, research associate  
A.J. Lindsey, graduate research assistant  
Nick Christians, university professor  
Department of Horticulture

### Introduction

This is the initial establishment data from tall fescue subjected to simulated athletic field traffic conditions. This is a 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 is home to both a traffic tolerance and shade setting of this trial.

### Materials and Methods

Research was conducted at the Iowa State University Horticulture Research Station. The ground was cleared of all vegetative cover before planting with a nonselective herbicide (glyphosate).

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 per 1,000 ft<sup>2</sup>. The mowing height is three 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 will be used to simulate athletic field traffic.

Digital images were taken monthly starting with a rating 14 days after seeding and again in November. Digital images were captured with the use of a light box to ensure consistent lighting and a digital camera. Images were scanned using Sigma Scan 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, and not presented here.

### Results and Discussion

Significant differences existed between cultivars for percent cover, color (data not shown) and quality for both the October and November rating dates.

The values listed under each month in Table 1 are the averages of the percent green cover and turfgrass quality. 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.

The cultivars were not yet fully established in 2018, so a year average was not calculated. A full year of observation will be complete in 2019 and will provide complete data for the entire season.

### Acknowledgements

Appreciation is extended to the NTEP organization for funding to conduct this project.

**Table 1. Percent green cover and quality ratings for the tall fescue simulated traffic cultivar trial, 2018.**

Cultivar	Percent green cover <sup>1</sup>		Quality <sup>2</sup>	
	Oct.	Nov.	Oct.	Nov.
Naturally Green	30	71	6.7	7.2
Paramount	28	70	6.3	7.3
DLFPS-321/3693	31	68	7.3	7
DLFPS-321/3694	32	78	6.3	7.5
DLFPS-321/3695	34	72	7.0	6.5
TMT1	38	72	7.2	6.8
ATF2116	23	68	6.7	7.0
NT-3	29	70	6.8	7.2
RS1	38	74	7.3	7.0
5LSS	37	75	7.3	6.8
BGR-TF3	42	78	8	7.3
ATF 1768	28	66	7.3	7.2
DLFPS-TF/3550	28	68	7	7.2
DLFPS-TF/3552	24	76	7.3	7.7
DLFPS-TF/3553	25	66	6.8	7.2
DLFPS-321/3679	25	62	6.5	6.8
LBF	29	70	7.2	6.8
TD2	41	76	7.3	7.0
DLFPS-321/3696	36	72	7.3	7.0
DLFPS-321/3699	30	75	7.2	7.5
Grande 3	28	72	6.8	7
Fayette	25	70	6.5	7.2
JT-517	36	70	7.3	7.0
JS-DTT	39	83	7.7	7.3
RDC	36	78	7.5	7.0
BAR 9FE MAS	37	81	7.3	7.5
BAR FA 8228	31	75	7.3	7.2
COL-TF-148	25	67	6.3	7.0
LTP-TF-122	31	65	7.3	7.2
LTP-TF-111	26	58	6.5	7.0
K18-ROE	37	74	7.2	7.2
K18-NSE	40	83	7.8	7.3
BY-TF-169	25	68	6.2	7.5
DLFPS-321/3701	24	61	6.7	6.7
DLFPS-321/3702	31	77	7.5	7.3
DLFPS-321/3703	21	57	6.5	6.7
PST-5TRN	24	64	6.5	6.5
PST-5GQ	18	63	6.2	7.0
PST-5MCMO	21	63	6.3	7.0
ProGold	37	75	7.8	7.5
PST-5E6	23	67	5.8	7.2
PST-5THM	29	74	6.8	7.5
PST-5BYOB	32	71	6.7	7.2
Lifeguard	37	79	7.2	7.3
PST-5MINK	19	67	6.0	6.8
Moondance	25	64	6.5	7.2
PST-5SQB	24	78	6.3	7.2
PST-5DZM	20	58	6.0	6.5
PST-5GLBS	25	77	6.7	7.5
PST-5DART	24	59	6.2	6.7
PST-5DC24	33	66	6.8	7.2
Tango	35	68	8.0	7.0

**Table 1. Percent green cover and quality ratings for the tall fescue shade cultivar trial, 2018 (continued).**

Cultivar	Percent green cover <sup>1</sup>		Quality <sup>2</sup>	
	Oct.	Nov.	Oct.	Nov.
3N1	24	61	6.7	6.5
Bandit	32	67	7.0	7.0
Copious TF	36	69	7.2	7.0
Padre 2	40	74	7.5	7.0
Bravo 2	37	71	7.8	7.0
NAI-FQZ-17	29	68	7.5	7.3
DLFPS-321/3705	35	75	8.0	7.5
DLFPS-321/3706	29	66	6.5	7.0
DLFPS-321/3707	27	65	7.0	7.3
DLFPS-321/3708	35	69	7.8	7.0
BAR-TF-134	29	77	7.3	7.5
BAR-FA8230	26	62	6.2	6.7
AH1	44	79	7.8	7.5
PPG-TF-249	31	67	6.8	7.3
PPG-TF-262	21	66	6.3	7.2
PPG-TF-267	28	64	6.7	7.2
AH2	46	84	7.7	7.5
K18-RS6	30	66	7.0	7.5
K18-WB1	34	75	7.5	7.3
RH1	36	69	7.5	6.8
RH3	43	74	7.7	7.0
JT 233	38	71	8.0	7.2
JT 268	25	63	6.7	7.3
PPG-TF 244	36	81	6.8	7.5
PPG-TF 305	32	74	6.7	6.8
PPG-TF 316	35	76	7.5	7.0
RC4	27	67	7.2	7.3
PPG-TF-257	32	73	7.5	7.3
PPG-TF-238	28	66	7.2	7.2
PPG-TF-254	31	57	6.8	6.7
PPG-TF-308	29	53	7.2	6.7
PPG-TF-255	26	68	6.5	7.0
PPG-TF-312	33	74	7.2	7.0
PPG-TF-315	27	68	7.3	7.3
PPG-TF-336	43	77	7.3	6.8
PPG-TF-337	22	61	6.5	6.3
ZRC1	26	66	6.8	6.8
PPG-TF-231	35	70	7.3	7.5
PPG-TF-306	25	60	7.2	7.3
PPG-TF-318	32	69	7.2	7.5
Bullseye	27	62	6.7	6.7
Firehawk SLT	24	63	6.2	7.0
Hemi	23	70	6.5	7.5
Bullseye LTZ	43	83	8.2	8.0
Turbo SS	27	64	7.7	8.2
Dragster	25	64	6.2	7.0
GO-RH20	32	66	7.3	6.3
Birmingham	36	79	7.3	7.3
GO-AOMK	21	56	6.5	7.0
NAI-3N2	36	70	7.3	6.8
NAI-ROS4	29	68	6.8	7.7
NAI-TUE	28	62	7.3	7.3

**Table 1. Percent green cover and quality ratings tall fescue shade cultivar trial, 2018 (continued).**

Cultivar	Percent green cover <sup>1</sup>		Quality <sup>2</sup>	
	Oct.	Nov.	Oct.	Nov.
NAI-ST5	32	70	7.0	6.8
SE5302	26	73	7.7	7.7
SE5STAR	24	61	7.0	7.3
SE5CR1	31	64	6.7	7.0
SETF104	26	70	7.0	7.3
SETFM2	26	64	6.8	7.5
SETFM3	26	61	7.2	7.2
3B2	33	64	7.0	7.2
RAD--TF105	33	66	7.3	7.3
RAD-TF0.0	30	68	7.5	7.7
RHL2	37	80	7.5	7.2
Raptor III	28	60	6.7	6.7
RHF	39	80	8.0	7.5
PPG-TF-313	30	73	7.0	8.0
PPG-TF-320	29	79	7.3	7.5
PPG-TF-323	29	74	7.2	7.5
PPG-TF-338	35	71	7.5	7.8
Estrena	35	75	7.7	7.8
AST8118LM	30	69	7.3	7.0
AST8218LM	37	79	7.7	7.3
A-TF31	35	71	7.8	7.8
Palomar	28	69	7.2	7.8
Escalade	37	78	7.3	7.5
OG-WALK	23	67	7.3	7.7
TF445	30	75	7.3	7.5
TF456	24	64	7.0	6.7
FC15-01P	24	63	6.2	6.5
Kentucky-31	44	78	7.3	7.5
<b>LSD (0.05)<sup>3</sup></b>	12	17	1.2	1.0

<sup>1</sup>Percent green cover is the average quality rated monthly with digital image analysis on a 0-100 scale.

<sup>2</sup>Quality rated using digital image analysis on a 1 to 9 scale with 1 = lowest quality, and 6 = acceptable quality.

<sup>3</sup>Means were separated using Fisher's LSD.