

Tall Fescue Shade Cultivar Evaluation Trial

RFR-A1809

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Introduction

This is the initial establishment data from field trials of tall fescue growing in natural shade 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 x 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 ft². The mowing height is three inches. Significant shade is provided by the shade tree cultivar trial, under which the turfgrass trial is planted.

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, but 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, which will allow for a set of complete data for the entire season.

Acknowledgements

Appreciation is extended to the NTEP organization for funding to conduct this project, as well as to Jeff Iles, professor and chair, Department of Horticulture, for use of the ground under his shade tree trial.

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

Cultivar	Percent green cover ¹		Quality ²	
	Oct.	Nov.	Oct.	Nov.
Naturally Green	41	67	6.3	7.7
Paramount	34	48	6.3	6.8
DLFPS-321/3693	39	58	7.3	7.2
DLFPS-321/3694	41	62	6.7	7.5
DLFPS-321/3695	41	59	7.3	7.2
TMT1	36	60	7.1	6.8
ATF2116	32	64	7.2	7.2
NT-3	40	66	7	7.5
RS1	39	58	7.8	7
5LSS	34	56	6.2	6.5
BGR-TF3	41	63	6.5	7.3
ATF 1768	37	60	7.3	7
DLFPS-TF/3550	38	61	6.8	7
DLFPS-TF/3552	30	63	7.7	7.5
DLFPS-TF/3553	36	64	6.5	7.6
DLFPS-321/3679	32	58	6.6	7.2
LBF	44	61	7.6	7
TD2	42	60	7.2	7.3
DLFPS-321/3696	34	54	6.5	6.7
DLFPS-321/3699	31	56	5.8	6.7
Grande 3	39	67	6.3	7.3
Fayette	27	53	6.2	6.5
JT-517	24	46	5.7	6.3
JS-DTT	34	54	6.5	6.2
RDC	39	65	6.8	7.3
BAR 9FE MAS	29	60	6.3	6.7
BAR FA 8228	44	64	6.5	6.8
COL-TF-148	29	50	6.2	7
LTP-TF-122	31	49	7.2	6.2
LTP-TF-111	33	55	7	7
K18-ROE	46	58	7.7	6.7
K18-NSE	40	58	6.7	6.8
BY-TF-169	35	56	6	7
DLFPS-321/3701	37	61	7.3	6.8
DLFPS-321/3702	26	42	5.8	6.3
DLFPS-321/3703	33	57	6.5	7.2
PST-5TRN	33	57	6.2	7
PST-5GQ	31	54	6.5	6.3
PST-5MCMO	32	57	6.3	6.5
ProGold	32	50	6.5	7.2
PST-5E6	34	68	6	6.8
PST-5THM	35	57	6.7	6.2
PST-5BYOB	39	64	6.8	77.7
Lifeguard	37	59	6.7	6.8
PST-5MINK	26	62	6.8	66.8
Moondance	35	58	7.8	6.5
PST-5SQB	36	51	7.2	6.3
PST-5DZM	34	56	7.5	6.5
PST-5GLBS	32	63	6.5	7.3
PST-5DART	32	60	6.8	6.7
PST-5DC24	35	65	7.3	7.3

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

Cultivar	Percent green cover ¹		Quality ²	
	Oct.	Nov.	Oct.	Nov.
Tango	38	61	6.8	6.8
3N1	30	62	6	6.8
Bandit	34	52	6.3	6.3
Copious TF	36	49	7.7	7.3
Padre 2	32	62	6.8	6.8
Bravo 2	35	64	6.3	6
NAI-FQZ-17	35	47	6.5	7.2
DLFPS-321/3705	37	69	6.2	6.8
DLFPS-321/3706	28	54	6	6.8
DLFPS-321/3707	34	64	6.3	7.2
DLFPS-321/3708	32	55	6	7.3
BAR-TF-134	33	60	5.8	7
BAR-FA8230	30	54	6	6.8
AH1	44	65	7	7.3
PPG-TF-249	31	58	6.3	7
PPG-TF-262	44	67	6.7	7.8
PPG-TF-267	35	63	6	7.3
AH2	45	66	6.8	7.3
K18-RS6	39	65	6.3	7.2
K18-WB1	35	60	6.8	7.2
RH1	32	58	5.8	6.8
RH3	31	60	6.2	6.7
JT 233	24	49	5.7	6.7
JT 268	32	62	7.5	7.2
PPG-TF 244	39	60	6.8	7
PPG-TF 305	37	61	6.8	7
PPG-TF 316	43	65	7.3	7.3
RC4	37	59	7.5	7.2
PPG-TF-257	38	65	7.2	7.5
PPG-TF-238	34	67	7.3	7.5
PPG-TF-254	38	68	7.8	7.5
PPG-TF-308	39	64	7.5	7.5
PPG-TF-255	38	71	7.2	7.7
PPG-TF-312	32	52	6.5	6.3
PPG-TF-315	38	59	7.5	7
PPG-TF-336	40	61	8	7.2
PPG-TF-337	33	62	6.7	7.2
ZRC1	37	59	6.3	7
PPG-TF-231	32	50	6.7	6.2
PPG-TF-306	39	63	7.3	7.2
PPG-TF-318	36	55	7	6.7
Bullseye	34	59	6.2	7
Firehawk SLT	33	60	6.5	7.5
Hemi	42	64	6.7	7.5
Bullseye LTZ	43	59	8.2	7
Turbo SS	36	55	6.5	7
Dragster	34	50	6	6.7
GO-RH20	43	63	7.2	7.2
Birmingham	36	57	7	7.2
GO-AOMK	31	52	6.8	6.7
NAI-3N2	39	59	6.7	7.2
NAI-ROS4	38	59	6.8	6.8

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

Cultivar	Percent green cover ¹		Quality ²	
	Oct.	Nov.	Oct.	Nov.
NAI-TUE	43	57	7.3	6.8
NAI-ST5	48	69	7.2	7.5
SE5302	32	60	6	6.8
SE5STAR	33	52	6.8	6.7
SESCR1	31	52	7	6.3
SETF104	32	57	6.3	7.3
SETFM2	26	46	6.2	6.2
SETFM3	36	57	6.5	6.7
3B2	33	53	6.5	7
RAD--TF105	32	61	6.3	7
RAD-TF0.0	35	65	6.7	7.7
RHL2	40	67	7.3	7.5
Raptor III	33	53	7	7
RHF	38	60	7	7.2
PPG-TF-313	40	63	6.8	7.2
PPG-TF-320	35	63	6.3	7.2
PPG-TF-323	27	41	6.5	6.3
PPG-TF-338	36	60	6.7	6.8
Estrena	39	67	6.8	7
AST8118LM	29	66	5.8	7.3
AST8218LM	36	56	7.8	6.8
A-TF31	26	43	6.2	6.7
Palomar	32	48	6.8	6.2
Escalade	36	58	6.8	6.8
OG-WALK	33	56	6.8	6.8
TF445	32	58	6.5	7.2
TF456	36	60	6.8	7
FC15-01P	28	50	6	6.5
Kentucky-31	46	70	7.7	7.7
LSD (0.05)³	9.8	16	1.2	1.1

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

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

³Means were separated using Fisher's LSD.