

2018

Kentucky Bluegrass Shade Cultivar Evaluation Trial

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Recommended Citation

Thoms, Adam; Pease, Ben; and Christians, Nick (2018) "Kentucky Bluegrass Shade Cultivar Evaluation Trial," *Farm Progress Reports*: Vol. 2017 : Iss. 1 , Article 50.

DOI: <https://doi.org/10.31274/farmprogressreports-180814-2025>

Available at: <https://lib.dr.iastate.edu/farmprogressreports/vol2017/iss1/50>

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Kentucky Bluegrass Shade Cultivar Evaluation Trial

RFR-A1717

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Introduction

This is the initial establishment data from Kentucky bluegrass 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 89 seeded cultivars, including a number of new experimental cultivars. Iowa State is conducting both a sun 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 15, 2017. 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/1,000 ft². The mowing height is three in. Significant shade is provided by the shade tree cultivar trial, where the turfgrass trial is planted.

Digital images were taken monthly starting October 2017 until the turfgrass stopped growing. Digital images were captured with the use of a light box to ensure a consistent lighting and 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).

Results and Discussion

Significant differences existed between cultivars for percent cover, color 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, turfgrass color, and 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 2017, so a year average was not calculated. A full year of observation in 2018 will provide 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 for use of the ground under his shade tree trial.

Table 1. Percent green cover, turfgrass color, and quality ratings for the Kentucky bluegrass shade cultivar evaluation trial, 2017.

Cultivar	Percent green cover ¹		Turf color ²		Turf quality ³	
	Oct.	Nov.	Oct.	Nov.	Oct.	Nov.
A11-40	13	12	6.3	6.2	5.5	6.0
A13-1	24	26	5.0	5.8	5.8	6.2
A99-2897	28	35	5.2	5.0	5.7	6.3
LTP-11-41	52	43	4.2	5.0	7.2	6.7
Blue Knight	21	24	5.5	5.3	5.7	6.0
RAD 553	36	23	5.7	5.5	6.5	6.0
Selway	39	31	5.0	5.7	6.5	6.3
Babe	32	34	4.7	4.7	5.8	6.0
AKB3128	41	37	4.5	4.7	7.0	6.2
AKB3179	19	9	5.8	5.0	5.7	5.5
AKB3241	32	30	4.3	4.8	5.7	6.0
NK-1	15	13	6.7	6.3	6.0	6.0
KH3492	36	35	5.2	5.7	6.7	6.5
A12-7	17	16	5.8	5.7	6.0	6.0
After Midnight	51	54	4.5	5.2	7.3	6.8
J-1138	56	54	4.0	5.0	7.3	6.5
J-1319	61	56	4.3	5.0	8.2	6.8
J-2726	48	52	4.3	4.8	7.0	6.5
J-3510	42	39	5.5	5.8	6.7	6.7
BAR PP 71213	25	16	5.8	5.3	6.0	6.0
BAR PP 7309V	34	39	4.0	4.2	5.7	6.0
BAR PP 79366	26	33	6.8	6.2	6.5	6.5
Barvette HGT®	21	15	6.3	5.8	6.2	6.0
BAR PP 7K426	24	30	5.5	5.3	6.7	6.3
BAR PP 7236V	29	24	4.7	5.5	5.7	6.2
BAR PP 79494	23	22	6.3	6.0	6.3	6.2
BAR PP 110358	41	37	4.3	4.7	6.3	6.2
RAD-1776	46	45	4.7	5.2	7.3	6.5
NAI-A16-3	41	32	5.7	4.5	7.0	5.8
NAI-13-132	39	31	4.5	5.3	6.5	6.3
NAI-15-80	9	8	7.0	7.7	5.7	6.3
NAI-13-9	55	53	4.8	4.8	7.5	6.5
NAI-13-14	40	38	4.3	4.3	6.0	6.3
NAI-14-122	28	11	6.5	6.3	6.5	5.8
PST-K13-143	58	22	5.8	5.5	7.8	6.2
NAI-14-128	20	25	6.2	6.5	6.0	6.3
NAI-14-132	20	10	6.3	7.2	6.0	6.3
NAI-14-133	12	10	7.5	6.5	6.2	6.2
NAI-14-176	8	8	8.5	7.7	6.5	6.3
NAI-14-178	8	9	7.8	7.0	6.0	6.2
NAI-14-187	30	26	6.3	6.2	6.5	6.3
NAI-15-84	13	16	6.8	6.2	6.0	6.0
Pivot	46	52	4.7	5.3	7.3	7.2
Blue Devil	36	36	5.3	5.2	6.3	6.2
Skye	42	36	5.2	5.0	6.5	6.2
GO-22B23	48	63	4.8	5.3	6.8	7.0
GO-2628	28	39	4.7	4.0	5.8	6.2
GO-2425	37	35	5.8	5.5	7.2	6.5

Table 1. Percent green cover, turfgrass color, and quality ratings for the Kentucky bluegrass shade cultivar evaluation trial, 2017 (continued).

Cultivar	Percent green cover ¹		Turf color ²		Turf quality ³	
	Oct.	Nov.	Oct.	Nov.	Oct.	Nov.
DLFPS-340/3364	19	11	5.2	5.5	5.5	5.8
DLFPS-340/3446	40	35	5.3	5.7	6.7	6.3
DLFPS-340/3556	35	34	5.0	5.2	6.3	6.2
DLFPS-340/3553	42	43	4.7	4.5	6.5	6.2
DLFPS-340/3494	23	18	5.8	5.5	6.0	5.8
DLFPS-340/3500	14	18	7.0	6.8	6.2	6.3
DLFPS-340/3438	43	35	4.7	5.0	6.7	6.0
DLFPS-340/3549	19	18	5.8	6.2	5.8	6.2
DLFPS-340/3548	27	6	6.0	7.0	6.0	6.2
DLFPS-340/3444	24	40	5.3	5.0	5.7	6.3
DLFPS-340/3455	38	44	4.7	4.7	6.7	6.2
DLFPS-340/3550	19	15	5.3	5.7	5.3	6.0
DLFPS-340/3551	34	24	4.7	6.2	6.3	6.2
DLFPS-340/3552	37	24	4.8	4.8	6.3	5.8
MVS-130	19	8	6.0	6.0	5.8	5.8
A16-1	20	24	6.2	6.3	6.0	6.3
A16-7	12	8	7.0	7.3	6.2	6.3
A12-34	11	15	6.5	6.3	5.8	6.2
A11-26	15	13	7.2	6.5	6.2	6.2
PPG-KB 1320	19	23	6.0	5.5	5.8	5.8
A11-38	10	12	6.8	4.5	5.8	5.5
PPG-KB 1131	35	27	6.0	5.5	7.0	6.2
A10-280	23	28	6.0	6.0	6.2	6.5
Shamrock	29	18	5.2	4.8	6.0	5.7
A16-2	20	31	5.7	4.7	5.8	6.0
PPG-KB 1304	17	20	6.5	5.8	6.0	6.2
A15-6	9	10	7.3	6.7	6.0	6.2
A16-17	29	38	5.7	4.0	6.0	5.8
Prosperity	50	24	4.7	5.5	7.0	6.2
A06-8	32	28	5.3	5.0	6.7	6.0
Kenblue	29	17	5.7	4.7	6.2	5.5
PST-K13-139	16	10	6.5	5.8	6.2	5.8
PST-K13-141	50	32	5.7	4.7	7.7	6.2
PST-K11-118	40	25	4.5	5.7	6.3	6.2
PST-K15-157	29	9	5.3	5.0	6.0	5.7
PST-11-7	39	29	5.2	5.0	6.3	5.8
PST-K15-167	32	29	4.7	5.5	6.0	6.2
PST-K15-177	18	15	6.3	5.5	6.2	6.0
PST-K15-172	34	15	5.2	5.5	6.2	5.8
Midnight	39	32	5.5	6.0	6.3	6.5
PST-T14-39	45	36	4.5	5.3	6.5	6.2
LSD (0.05) ⁴	23	23	1.9	1.3	1.2	0.7

¹Percent green cover as determined with digital image analysis on a 1 to 100% scale.

²Color rated using digital image analysis on a 1 to 9 scale with 1 = light green and 9 = dark green.

³Quality rated using digital image analysis on a 1 to 9 scale with 1 = lowest quality, and 6 = acceptable quality.

⁴Means were separated using Fisher's LSD.