



Report from the 2001 NTEP Tall Fescue Trial – 3rd Year Data

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Summary. Tall fescue (*Festuca arundinacea* Schreb.) is a very popular grass for lawn areas in northern Arkansas and throughout the transition zone. Identifying adapted cultivars for the region remains a central focus of the University of Arkansas turfgrass research program. The National Turfgrass Evaluation Program is the predominant means by which cultivars are tested throughout North America. A tall fescue cultivar trial was planted in the fall of 2001 at Fayetteville, Ark. During the 2003 growing season, cultivars were rated for overall turf quality, turf color, and incidence of brown patch disease. The cultivars, ‘2nd Millennium’, ‘Inferno’, ‘Finesse II’, ‘Quest’, and ‘Turbo’ were consistently rated high for overall turf quality throughout the growing season and were among cultivars with the darkest green color on a 1 May rating date. ‘Kentucky 31’ and ‘Elisa’ averaged poor rating values for both turf quality and color. There were no significant differences among cultivars in brown patch incidence during a disease outbreak on 28 August.

Tall fescue is one of the most popular cool-season turfgrasses in the transition zone regions of the United States, as it is widely used in lawns, sports fields and on utility turf in the region. Tall fescue is known for its superior drought tolerance, good shade tolerance, and ability to grow on poor soils. Breeding efforts in the past three decades have made tremendous strides in improving the overall quality of this species.

The National Turfgrass Evaluation Program (NTEP) is an organization within the U.S. Department of Agriculture that annually oversees turfgrass cultivar evaluation experiments at various sites throughout the U.S. and Canada. Each turfgrass species is tested on a four- to five-year cycle at sites throughout the growing region for that particular species. The University of Arkansas has been an active participant in the NTEP and has conducted several tests on tall fescue cultivars over the past 15 years. This report will describe the third-year performance data, including overall quality, turf color, and brown patch resistance, for the 2001 NTEP tall fescue trial at Fayetteville, Ark.

Materials and methods

The cultivar experiment was planted on 20 Oct. 2001 at the University of Arkansas Research and Extension Center in Fayetteville. The plot size was 4 x 5 ft (1.2 x 1.5 m) and there were three replications of each cultivar. The cultivars were broadcast planted at a seeding rate of 4.0 lb / 1000 ft² (192 kg / ha). Plots have been maintained under lawn conditions throughout the duration of the study. Mowing height is varied during the year from 1.5 in. (3.8 cm) from October to May, and then raised to 2.5 in. (6.3 cm) for the summer season. Three nitrogen applications have been made per season with 1.0 lb N / 1000 ft² (48 kg N / ha) applied in September and May and 2.0 lb N / 1000 ft² (96 kg / ha) applied in November. Irrigation has been supplied as needed to prevent stress and maintain vigorous growth.

Overall turf quality was evaluated monthly from March through November in 2003. Quality was visually assessed on a 1 to 9 scale, with 9 representing ideal dark green, uniform, fine-textured turf and 1 representing dead turf. Turf color was visually evaluated on 1 May 2003 on a scale of 1 to 9, with 9 representing ideal, dark green turf and 1 representing tan or brown turf. Brown patch incidence was evaluated on 28 Aug. 2003 on a scale of 1 to 9, with 9 representing a completely diseased turf stand and 1 representing no disease.

For each evaluation parameter, an analysis of variance was computed to determine if the effect of cultivar was significant ($P < 0.05$). When significant, means were separated according to Fisher’s least significant difference test ($P < 0.05$).

Results and discussion

Significant differences in turf quality were present among varieties on every rating date in 2003 except 5 November (Table 1). On average, the cultivars with the highest turf quality throughout the growing season were ‘2nd Millennium’, ‘Turbo’, ‘Cochise III’, ‘Rebel Exeda’, ‘Inferno’, ‘Finelawn Elite’, ‘Biltmore’, ‘Magellan’, ‘Blackwatch’, ‘Finesse II’, ‘Riverside’, ‘Plantation’, ‘Avenger’, ‘Cayenne’, ‘Endeavor’, ‘Picasso’, ‘Quest’, ‘Forte’, and ‘Mustang 3’. The cultivars with the worst overall quality throughout 2003 were ‘Elisa’ and ‘Kentucky 31’.

There were significant differences in turf color among cultivars on the 1 May rating date (Table 1). ‘Finesse II’ and ‘Turbo’, each with an average rating value of 7.0, were rated darkest for color. Statistically, ‘2nd Millennium’, ‘Inferno’, ‘Plantation’, ‘Quest’, ‘SR 8550’, ‘Tahoe’, and ‘Tomahawk RT’ were also rated among the darkest green cultivars. ‘Kentucky 31’ and ‘Elisa’ had the lightest green color with average color

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rating values of 2.3 and 2.7, respectively.

When brown patch disease was active across the experimental area on 28 August, average rating values for disease incidence for cultivars ranged from 1.3 to 4.7 (Table 1). However, differences among cultivars were not statistically significant due to inconsistent disease incidence among replications within cultivars.

Conclusions

There have been significant differences among tall fescue cultivars with regard to overall turf quality, turf color, and brown patch incidence through the 2003 growing season. Data will continue to be collected on these cultivars throughout the 2004 growing season and will be published by NTEP.

Table 1. Turf quality, turf color, and brown patch incidence means for tall fescue cultivars during the 2003 growing season.

Cultivar ^w	Turfgrass quality ^z										Color ^y	Brown patch ^x
	Evaluation date										Evaluation date	
	3/25	4/25	5/21	6/26	7/29	8/28	9/21	10/25	11/05	Avg.	5/01	8/28
	----- rating value -----											
2nd Millennium	6.3	7.0	6.3	7.7	7.0	6.3	7.0	7.3	6.7	6.9	6.0	1.3
Avenger (L1Z)	5.0	5.7	6.0	6.3	5.7	5.7	6.3	6.3	6.3	5.9	5.3	3.0
Barlexas	4.7	4.7	4.3	4.7	4.0	4.7	4.7	4.7	5.3	4.6	4.0	3.3
Barlexas II	4.7	5.0	5.0	5.3	5.7	4.0	5.3	5.3	4.7	5.0	5.0	3.3
Barrera	5.0	5.0	5.7	6.3	5.0	5.0	6.0	6.3	5.7	5.6	5.3	3.3
Barrington	4.7	5.0	5.0	5.7	4.3	5.0	5.3	5.3	5.3	5.1	5.0	2.7
Biltmore	5.3	6.7	6.7	6.7	5.7	5.3	6.3	7.0	5.3	6.1	5.7	3.0
Bingo	5.3	6.0	6.0	6.7	5.0	5.3	6.3	6.7	5.3	5.9	5.3	2.0
Blackwatch (Pick-OD3-01)	6.0	6.0	6.0	7.3	6.3	4.3	6.3	7.0	5.0	6.0	5.7	3.7
Bonsai	3.3	3.7	4.7	4.3	4.3	4.3	4.7	4.7	4.3	4.3	4.3	3.0
Bravo	5.0	4.3	5.0	4.7	4.7	3.7	4.7	5.0	4.3	4.6	4.0	4.3
Cayenne	5.3	6.0	5.7	6.0	7.0	5.3	6.7	6.0	5.3	5.9	5.3	2.7
Cochise III (018)	6.0	6.3	6.7	6.7	6.3	5.3	6.7	6.7	6.7	6.4	4.7	2.7
Constitution (ATF-593)	5.0	5.7	6.0	6.3	5.7	5.3	6.0	6.3	6.0	5.8	5.7	1.7
Covenant (ATF 802)	4.3	4.0	5.0	4.7	5.3	4.7	5.3	5.0	4.7	4.8	5.0	3.7
Coyote	4.7	5.3	6.0	5.7	5.0	4.7	5.7	6.0	5.0	5.3	4.7	2.7
Davinci (LTP-7801)	5.0	5.3	5.7	5.7	5.3	4.3	5.7	6.0	5.7	5.4	5.3	3.7
Daytona (MRF 23)	4.3	5.0	5.0	5.0	4.3	4.7	5.3	5.3	5.0	4.9	4.7	3.3
Dominion	5.0	4.7	5.7	6.0	5.7	5.0	6.0	6.0	5.0	5.4	4.7	2.0
Dynasty	4.7	5.3	5.7	6.0	5.3	5.0	6.0	6.0	5.3	5.5	4.7	2.7
Elisa	4.0	3.3	3.7	4.0	3.7	4.3	4.7	4.0	4.3	4.0	2.7	3.3
Endeavor	5.3	6.0	6.0	6.3	6.0	5.3	6.3	6.3	5.7	5.9	4.3	2.0
Falcon II	5.7	4.7	4.7	4.7	4.7	4.3	5.0	5.0	5.0	4.9	4.0	3.0
Falcon IV (F-4)	4.7	5.0	5.0	5.7	5.7	5.0	5.7	5.7	5.3	5.3	5.3	3.0
Finelawn Elite (DLSD)	6.3	6.0	6.3	6.7	5.7	5.3	6.3	7.0	6.3	6.2	4.7	3.3
Finesse II	5.7	6.7	6.3	6.3	5.3	5.0	6.0	6.7	6.3	6.0	7.0	2.7
Five Point (MCN-RC)	5.3	5.7	5.7	6.0	5.3	5.0	5.7	6.0	5.7	5.6	5.7	2.7
Focus	5.0	5.7	5.7	5.7	5.7	5.3	5.7	5.7	6.3	5.6	4.7	2.3
Forte (BE-2)	5.7	5.7	6.7	6.0	5.7	5.0	6.0	6.7	5.7	5.9	5.7	3.3

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Cultivar ^w	Turfgrass quality ^z										Color ^y	Brown patch ^x
	Evaluation date										Evaluation date	
	3/25	4/25	5/21	6/26	7/29	8/28	9/21	10/25	11/05	Avg.	5/01	8/28
	rating value											
Grande II	5.7	5.7	5.7	6.0	5.0	4.7	5.3	6.0	5.3	5.5	5.3	3.3
Gremlin (P-58)	5.3	6.0	6.0	5.7	5.7	4.3	6.0	6.0	5.7	5.6	5.7	3.7
Guardian-21 (Roberts DOL)	5.3	5.3	6.0	6.0	5.7	4.7	6.0	6.3	5.7	5.7	5.7	2.7
Inferno (JT-99)	5.3	6.7	6.7	6.7	6.7	5.3	6.7	6.7	5.7	6.3	6.0	3.0
Jaguar 3	4.7	4.3	4.7	5.0	5.0	5.3	5.7	5.0	5.0	5.0	4.0	2.7
Justice (RB2-01)	5.3	5.3	5.7	6.7	5.0	5.3	6.0	6.7	6.0	5.8	5.7	3.3
Kalahari	5.7	6.3	5.0	6.3	6.0	5.0	6.3	6.0	5.7	5.8	5.3	2.7
Kentucky 31	3.3	3.3	3.0	2.7	3.3	3.3	3.3	3.0	3.3	3.2	2.3	1.3
Kitty Hawk 2000	4.7	5.3	4.3	5.3	4.3	4.3	5.0	5.3	5.0	4.9	5.7	3.0
Lancer	5.0	4.3	4.7	4.3	4.0	4.0	4.3	4.7	5.0	4.5	4.3	3.3
Laramie	4.3	5.0	5.0	5.0	4.7	4.7	5.3	5.3	5.3	5.0	6.0	3.3
Legitimate	4.3	4.3	4.7	4.7	4.3	5.0	4.7	4.7	5.3	4.7	5.0	2.3
Magellan (OD-4)	5.3	6.3	6.0	6.7	6.3	5.3	6.7	6.7	5.7	6.1	5.3	1.7
Masterpiece	6.3	5.7	5.7	6.0	5.7	4.7	6.0	6.0	5.3	5.7	4.0	2.7
Matador	5.3	5.7	4.7	5.3	5.0	5.0	5.7	5.3	5.3	5.3	5.3	4.7
Millennium	5.7	6.0	5.7	6.0	5.7	6.0	6.3	6.0	5.0	5.8	5.0	1.7
Mustang 3	5.7	6.0	6.0	6.3	6.3	5.0	6.0	6.3	5.3	5.9	5.0	2.3
Olympic Gold	5.0	4.7	5.3	6.0	5.7	5.7	6.0	6.0	5.3	5.5	4.3	2.0
Padre (NJ4)	5.3	5.7	5.7	6.0	5.7	5.0	6.0	6.0	5.7	5.7	5.3	2.0
Picasso	6.0	6.3	6.0	6.3	5.0	5.7	6.0	6.3	5.7	5.9	5.3	2.3
Plantation	6.0	5.7	6.3	6.3	5.0	6.0	6.3	6.3	5.7	6.0	6.3	1.7
Prospect	4.3	4.3	5.0	4.7	5.3	5.7	5.7	5.0	5.7	5.1	5.3	2.3
Pure Gold	4.3	5.0	4.7	5.0	5.3	4.7	5.3	5.0	5.0	4.9	5.7	2.3
Quest	5.3	6.3	5.7	6.7	5.3	6.0	6.0	6.3	5.7	5.9	6.7	1.7
Raptor (CIS-TF-33)	4.3	5.7	6.0	6.0	5.0	5.0	5.7	6.3	5.7	5.5	6.3	3.3
Rebel Exeda	5.7	6.7	6.7	7.0	6.3	5.3	6.3	7.0	6.0	6.3	5.7	3.0
Rebel Sentry	4.3	5.3	5.7	5.7	5.7	5.7	5.7	5.7	5.3	5.4	5.3	2.3
Rembrandt	5.0	4.7	5.3	5.7	5.3	5.0	6.0	6.0	5.3	5.4	5.3	2.7
Rendition	4.3	5.7	6.3	6.3	6.0	4.7	6.0	6.3	5.3	5.7	5.3	2.7
Riverside (ProSeeds 5301)	4.7	6.0	6.0	6.7	5.3	6.3	6.7	6.7	5.7	6.0	5.0	2.0
Scorpion	4.0	4.7	5.3	5.7	4.7	4.7	5.3	5.7	5.0	5.0	4.3	2.7
Signia	4.3	5.3	5.3	6.0	5.7	5.3	6.0	6.0	5.7	5.5	6.3	2.7
Silverado II (PST-578)	4.7	5.7	5.3	5.0	5.7	4.7	5.7	5.3	5.0	5.2	5.7	2.7
Silverstar (PST-5ASR)	5.0	5.3	5.3	6.7	5.0	5.0	5.7	6.0	5.3	5.5	5.3	3.0
South Paw (MRF 24)	4.7	5.7	6.3	6.0	5.3	4.7	5.7	6.3	5.3	5.6	5.3	3.3
Southern Choice II	5.3	5.0	5.3	6.0	5.3	5.7	5.7	6.0	5.7	5.6	5.0	2.3
SR 8250	6.0	6.0	6.0	6.3	6.7	4.0	6.0	6.3	5.0	5.8	4.0	3.3
SR 8550 (SRX 8BE4)	4.0	4.7	4.7	5.0	4.7	5.0	5.3	5.0	5.0	4.8	4.7	2.0
SR 8600	4.3	5.0	5.7	5.7	5.0	5.3	5.7	6.0	5.0	5.3	5.3	2.0
Stetson	4.0	4.0	4.7	4.3	4.3	5.3	5.0	4.7	4.3	4.5	3.7	3.0

Table 1. Turf quality, turf color, and brown patch incidence means for tall fescue cultivars during the 2003 growing season, continued.

Cultivar ^w	Turfgrass quality ^z										Color ^y	Brown patch ^x
	Evaluation date										Evaluation date	
	3/25	4/25	5/21	6/26	7/29	8/28	9/21	10/25	11/05	Avg.	5/01	8/28
	rating value											
Tahoe (CAS-157)	4.0	5.0	5.3	5.7	5.3	5.0	5.7	5.7	5.0	5.2	6.3	2.3
Tar Heel	5.0	5.0	5.7	5.3	5.7	5.3	6.0	5.7	5.0	5.4	4.7	2.3
Tar Heel II (PST-5TR1)	5.7	5.3	5.7	5.7	5.7	5.0	5.7	5.7	5.3	5.5	4.3	2.0
Tempest	4.7	4.7	5.3	5.7	5.0	5.7	5.7	6.0	5.3	5.3	5.0	1.7
Titan Ltd.	5.3	5.3	4.7	5.0	4.7	4.3	5.0	5.0	5.3	5.0	4.7	3.7
Titanium (SBM)	5.0	5.3	5.0	5.7	6.0	4.7	5.7	5.7	5.7	5.4	4.3	3.0
Tomahawk RT	4.0	5.3	5.0	6.0	5.7	5.3	6.0	6.0	5.3	5.4	6.7	2.7
Tracer	5.0	5.3	6.0	6.3	4.7	4.7	5.3	6.3	5.3	5.4	5.7	3.3
Tulsa II (ATF 706)	4.7	4.3	4.3	5.0	4.3	4.3	4.7	5.0	5.0	4.6	4.0	3.3
Turbo (CAS-MC1)	5.3	6.0	6.7	7.3	6.3	6.7	7.0	7.3	6.3	6.6	7.0	1.3
Watchdog	5.3	5.7	5.7	6.3	5.3	3.7	5.3	6.3	5.3	5.4	4.7	4.3
Wolfpack	5.0	4.7	5.7	5.7	5.7	5.0	5.7	6.0	5.0	5.4	4.0	1.7
Wyatt	4.0	4.7	5.0	5.3	4.7	4.3	5.0	5.3	5.0	4.8	3.7	2.7
LSD0.05 ^v	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	—	0.97	1.25	—
Significance ^u	***	***	***	***	***	**	**	***	NS	***	***	NS

^z Quality was rated on a scale of 1 to 9 (9 = ideal dark green, uniform, dense, fine-textured turf, 1 = dead turf).

^y Color was rated on a scale of 1 to 9 (9 = ideal dark green turf, 1 = brown/tan turf).

^x Brown patch was rated on a scale of 1 to 9 (9 = severe brown patch, 1 = no disease).

^w Experimental names of recently registered cultivars are in parentheses.

^v Fisher's protected least significant difference values at $P = 0.05$.

^u **, *** Significant at the 0.01, 0.001 probability levels, respectively. NS = not significant.