

Report from the 2006 NTEP Tall Fescue Trial – 2009 Data

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Photo by Mike Richardson

Cool-season cultivar trials at Fayetteville, Ark.

Summary. Tall fescue 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, containing 113 entries, of which 54 are now commercially-available cultivars, was planted in the fall of 2006 at Fayetteville, Ark. Cultivars were rated for turf color, overall turf quality, and

turfgrass coverage several times during the 2009 growing season. The cultivars that rated highest for overall turfgrass quality during the 2009 growing season included Spyder LS, 3rd Millennium SRP, Cezanne RZ, Padre, Speedway, Gazelle II, Justice, and Falcon IV. However, the study experienced relatively mild environmental conditions during the 2009 growing season and very low disease pressure, so many cultivars performed well during this season.

Abbreviations: NTEP, National Turfgrass Evaluation Program

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Tall fescue (*Festuca arundinacea*) is one of the most popular cool-season turfgrasses in the transition zone regions of the United States and 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 relative to other cool-season grasses. 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 20 years. This report summarizes the 2009 performance data, including turfgrass color, turfgrass quality, and turfgrass coverage for the NTEP 2006 National Tall Fescue Test at Fayetteville, Ark.

Materials and Methods

This cultivar experiment is being conducted at the University of Arkansas Agricultural Research and Extension Center in Fayetteville. The plot size was 4 by 5 ft and there were three replications of each cultivar. Prior to seeding, the entire trial area was fumigated with methyl bromide and a pre-plant fertilizer (10-20-20) was applied at 10 lb/1000 ft² prior to seeding. One-hundred and thirteen tall fescue cultivars and experimental lines were broadcast planted on 2 Oct. 2006 at a seeding rate of 6 lb/1000 ft². Plots were maintained under lawn conditions throughout the duration of the study. Mowing height was maintained at 1.5 inch throughout the season with clippings returned. Four nitrogen applications were made during each growing season with 2.0 lb N/1000 ft² applied in November and 1.0 lb N/1000 ft² applied in April, June, and September. All N applications were made as urea (46-0-0). Irrigation was supplied as needed to promote establishment, maintain vigorous growth, and prevent drought stress.

Overall turf quality is evaluated monthly from March through October, but is presented as the yearly average in this paper. 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. Turfgrass color was evaluated bi-monthly from March through November and is presented as the yearly average in this paper. Color was visually assessed on a 1 to 9 scale, with 9 representing ideal dark green color and 1 representing chlorotic conditions. Turfgrass coverage was determined three times during the season using digital image analysis (Richardson et al., 2001). For this report, the only data that will be presented and discussed are from those cultivars (54 total) that were commercially available at the time this paper was published.

Results and Discussion

The 2009 growing season was noteworthy, in that Fayetteville experienced relatively mild conditions throughout the summer and extremely wet and cool conditions late in the summer and through the early fall (Richardson and Stiegler, 2010). Typically, brown patch (*Rhizoctonia solani*) pressure is very high on these types of trials (Richardson et al., 2009), but we did not record any significant outbreaks of brown patch during the 2009 season. Significant differences in turf quality were present among cultivars on every rating date in 2009 (data not shown), but were also significantly different when averaged over the entire season (Table 1). Some of the cultivars with the highest turf quality during the 2009 season included Spyder LS, 3rd Millennium SRP, Cezanne RZ, Padre, Speedway, Gazelle II, Justice, and Falcon IV (Table 1). Interestingly, many of these cultivars were not in the top statistical group over the 2007 and 2008 growing seasons (Richardson et al., 2009). The first two seasons of this trial were more typical with regard to summer stress, and the cultivars that performed best during the 2009 season may have rated higher since this season was milder and there was less disease pressure. Regardless, the change in ranking of cultivars across seasons justifies the evaluation of these trials over a 5-6 year period.

Significant differences in turfgrass color have also been documented in this trial, with cultivars such as Toccoa, Faith, AST9001, Compete, Hudson, Reunion, AST7002, AST7001, Renovate, AST9003, and AST7003 having the darkest green genetic color, while Ky-31 had the lowest (Table 1). As mentioned, brown patch disease was not observed during the 2009 season due to the unseasonably cool weather. As such, there was minimal loss of turf cover in any of the plots and all plots maintained an average turfgrass coverage percentage of over 98% (Table 1).

These data represent ongoing evaluations of tall fescue cultivars that will be marketed in this region in the coming years. Data will continue to be collected on these varieties through the 2010 growing season. Yearly summaries of the data from this site and all sites around the United

States will be published by NTEP and be available at their website (www.ntep.org).

Literature Cited

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Table 1. Average turfgrass quality, color, and coverage for commercially-available tall fescue cultivars for the 2009 season.

Entry	Avg. quality		Color		Cover	
	-----	1-9, with 9 = highest quality or color	-----	-----	%	
Spyder LS	7.1	a ^z	5.9	n-v	99.2	a-i
3rd Millennium SRP	6.9	ab	6.0	k-u	99.2	a-p
Cezanne RZ	6.6	a-g	5.7	s-w	99.1	c-t
Padre	6.6	a-g	6.4	d-p	99.2	a-o
Speedway	6.6	a-f	5.8	q-w	99.3	a-d
Gazelle II	6.6	a-f	6.2	i-t	99.2	a-l
Justice	6.6	a-g	6.0	m-v	99.1	c-s
Falcon IV	6.6	a-g	5.8	p-w	99.2	a-q
Raptor II	6.5	b-h	5.9	n-v	99.2	a-l
Talladega	6.5	b-h	5.9	n-v	99.2	a-o
Escalade	6.5	b-h	5.6	t-w	99.2	a-p
Wolfpack II	6.5	b-h	6.0	k-u	99.1	c-s
AST9001	6.5	b-h	6.8	a-h	99.0	g-v
Monet	6.4	b-i	5.7	s-w	99.2	a-j
Hemi	6.4	b-i	6.3	e-r	99.0	g-v
Firecracker LS	6.4	b-j	5.9	o-w	99.1	c-s
Mustang 4	6.4	b-j	6.2	i-t	99.2	a-k
Magellan	6.4	b-j	6.1	k-t	98.9	r-v
Faith	6.4	b-j	6.8	a-h	99.1	c-s
Rebel IV	6.4	b-j	6.2	h-t	99.1	d-u
Rhambler SRP	6.4	b-j	5.9	n-v	99.4	a
Van Gogh	6.3	c-l	5.3	w	99.4	a
Bullseye	6.3	c-k	5.9	o-w	99.2	a-o
Essential	6.3	c-k	6.0	l-u	99.2	a-j
Titanium LS	6.3	c-l	6.0	l-u	99.1	d-u
Hunter	6.3	c-l	6.5	d-o	99.1	c-t
Biltmore	6.3	c-k	6.5	d-n	98.8	uv
Tulsa Time	6.3	c-l	6.1	j-t	99.1	d-u
AST9002	6.3	c-l	6.6	c-m	99.0	d-v
Traverse SRP	6.3	c-k	6.0	m-v	99.2	a-l
Firenza	6.3	c-k	6.4	d-p	99.2	a-p
Skyline	6.2	e-m	6.2	i-t	98.9	q-v
SR 8650	6.2	e-m	6.2	i-t	99.1	d-u
Darlington	6.2	d-l	6.7	b-k	99.0	g-v
Compete	6.2	d-l	6.9	a-f	99.1	d-u
Hudson	6.2	d-l	6.9	a-g	99.0	i-v
Reunion	6.2	e-m	6.8	a-j	98.9	o-v
Aristotle	6.1	g-m	6.4	d-p	99.2	b-s
Turbo RZ	6.1	g-m	6.3	g-s	99.0	f-v
Turbo	6.1	f-m	6.5	d-n	99.2	a-o
Honky Tonk	6.1	g-m	6.2	h-t	99.0	j-v
Rembrandt	6.1	f-m	5.9	n-v	99.1	c-t
AST 7002	6.1	g-m	6.8	a-j	99.1	d-u
AST 7001	6.1	g-m	7.2	abc	99.2	a-p
Einstein	6.0	h-m	5.9	o-w	99.0	e-v
Toccoa	5.9	j-n	6.9	a-g	99.2	a-r
Tahoe II	5.9	j-n	6.0	k-u	99.0	l-v
Renovate	5.9	i-n	7.3	ab	98.8	v
AST9003	5.9	i-n	6.8	a-j	99.0	d-v
Lindbergh	5.8	k-n	6.0	l-u	99.3	a-f
AST 7003	5.8	lmn	6.9	a-g	99.0	d-v
Plato	5.7	mno	5.8	p-w	99.0	e-v
Silverado	5.4	no	5.4	uvw	99.1	d-u
Ky-31	4.3	p	4.3	x	99.1	d-v

^zMeans followed by same letter do not significantly differ (P=.05, LSD)