

2007 NTEP Seashore Paspalum Trial – Year 3 Results

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Additional index words: *Paspalum vaginatum*, turfgrass, cultivars, quality, color, spring green-up, leaf texture, seed heads, salt

Patton, A., M. Richardson, D. Karcher, and J. Trappe. 2010. 2007 NTEP seashore paspalum trial–year 3 results. Arkansas Turfgrass Report 2009, Ark. Ag. Exp. Stn. Res. Ser. 579:25-27.



Photo by Aaron Patton

Seashore paspalum is a relatively new turfgrass being evaluated for use in Arkansas.

Summary. Seashore paspalum is a relatively new turfgrass species being evaluated for use in Arkansas for golf courses or sports fields. Identifying adapted cultivars for the region remains a central focus of the University of Arkansas turfgrass research program. The National Turfgrass Evaluation Program (NTEP) is the predominant means by which cultivars are tested throughout North America. A seashore paspalum cultivar trial was planted in the summer of 2007 in Fayetteville, Ark. This trial is maintained under typical golf course fairway conditions and data

on spring green-up, winterkill, coverage, overall quality, leaf color, and fall color retention were collected in 2009. Overall, there are subtle differences between the turf quality of the cultivars, and they all perform similarly and provide acceptable turf quality in Northwest Arkansas. Future rating over the next four years will provide a more complete picture of the cultivars that perform best under these management conditions in our climate.

Abbreviations: NTEP, National Turfgrass Evaluation Program

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Several new seashore paspalum (*Paspalum vaginatum*) cultivars have appeared on the market in the past decade as several commercial and academic breeding programs have begun to identify and work with new germplasm. Seashore paspalum has excellent salinity tolerance, color, and mowing quality. Thus, the interest in, and use of, seashore paspalum has increased in recent years.

The National Turfgrass Evaluation Program (NTEP) is an organization within the U.S. Dept. 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 other species since 1986. This report will describe the data collected in 2009 for the 2007 NTEP Seashore Paspalum Trial at Fayetteville, Ark.

Materials and Methods

The entries were planted on 9 June 2007 at the University of Arkansas Research and Extension Center in Fayetteville. Plot size was 7 by 7 ft and there were three replications of each cultivar. Vegetative cultivars were planted as 2-inch diameter plugs on 12-inch spacings within the plots, while seeded cultivars were broadcast planted at a seeding rate of 1.0 lb/1000ft². Plots were maintained under golf course fairway conditions, with a mowing height of 0.5 inch and monthly applications of 0.5 lb N/1000ft² during the growing season. Irrigation was applied as needed to prevent drought stress.

Turf quality was evaluated monthly on a 1 to 9 scale, with 9 representing ideal dark green, uniform, fine-textured turf and 1 representing dead turf. Turfgrass coverage was monitored on 21 July as a visual estimate. Turf genetic color was visually evaluated on a scale of 1 to 9, with 9 representing ideal, dark green turf and 1 representing tan or brown turf. Fall color retention was evaluated on a scale of 1 to 9, with 9 representing turf with green coverage and 1 representing tan or brown turf. Cultivars were visually evaluated

for spring green-up in April using a scale of 1 to 9, with 9 representing complete green color and 1 representing a completely dormant turf stand. Winterkill was monitored in the spring with visual estimates of the percent of the plots that was dead and did not green-up after winter. Density was rated on a scale of 1 to 9, with 9 representing maximum density.

Results and Discussion

Spring green-up was greatest for UGA 22, Salam, and Seaspray (Table 1). Spring green-up was slowest for UGA 31, SeaIsle 1, UGA 7, and SRX9HSCP. There was up to 23% winterkill in some plots in the spring of 2009, but there was no difference in winterkill among cultivars or in July coverage of these cultivars following winter injury (Table 1). Air temperatures were as low as 8 °F during the winter (Richardson and Stiegler, 2010). This trial was planted in Fayetteville, Ark., which will help determine the northern adaptation of this turf species as well as determine if there are differences in winter hardiness among cultivars. Although there was little winterkill in 2008 or 2009, seashore paspalum is not thought to be well-adapted to Northwest Arkansas based on previous work with this species in Fayetteville. Additionally, there has not been significant winter damage in Arkansas since 2001 as a significant winterkill event typically occurs only once every ten years.

Turfgrass genetic color was darkest green for UGA 31 and least green for Salam, SRX9HSCP, UGA 22, Seaspray, and Sea Isle 1 (Table 1). Fall color retention and turf density were similar among the cultivars in October (Table 1).

There were no differences in turf quality among cultivars in May, June, August, or September 2009, but there were differences in turf quality among cultivars in July 2009 (Table 2). In July, turf quality was greatest for UGA 7, UGA 22, and UGA 31. Overall, there were subtle differences between the turf quality of the cultivars, and they all perform similarly at producing acceptable turf quality during the summer months in Northwest Arkansas.

These ratings were collected on plots that were two years old and should be reliable, but

shifts in cultivar performance are typical in these trials as the plots age and are subjected to various stresses. Future rating over the next two years will provide a more complete picture of the cultivars that perform best under these management conditions in our climate and whether this turf species will be a viable option for Arkansas golf courses.

Literature Cited

Richardson, M. and C. Stiegler. 2010. 2009 weather summary for Fayetteville, Arkansas. Arkansas Turfgrass Report 2009, Ark. Ag. Exp. Stn. Res. Ser. 579:169-170.

Table 1. Seashore paspalum spring green-up, winterkill, coverage, color, fall color retention, and density for various cultivars in Fayetteville, Ark. in 2009.

Cultivar	Spring green-up ^z	Winterkill ^y	Coverage	Color ^x	Fall color retention ^w	Density ^v
	April 30	April 30	July 21	July 18	October 28	June 23
	-1-9 scale-	-----%-----			-----visually rated on a 1-9 scale-----	
Salam	5.3	23	95	6.7	6.3	5.7
Sea Isle 1	4.0	22	96	6.3	6.0	6.7
Seaspray ^u	5.7	15	97	6.3	6.0	6.0
SRX9HSCP ^u	4.7	18	96	6.3	6.0	6.7
UGA 22	6.0	13	98	6.3	6.3	6.7
UGA 31	4.0	20	97	8.0	6.3	7.0
UGA 7	4.3	10	97	7.3	6.3	7.0
Average	4.9	17	97	6.8	6.2	6.5
LSD (P=0.05)	1.2	NS	NS	0.5	NS	NS

^z Spring green-up was visually evaluated using a scale of 1 to 9, with 9 representing complete green color and 1 representing a completely dormant turf stand.

^y Winterkill was visually evaluated as the percent of the plot that did not green-up in the spring.

^x Turf genetic color was visually evaluated on a scale of 1 to 9, with 9 representing ideal, dark green turf and 1 representing tan or brown turf.

^w Fall color retention was rated on a scale of 1 to 9, with 9 representing maximum green cover.

^v Density was rated on a scale of 1 to 9, with 9 representing maximum density.

^u Seeded seashore paspalum cultivar.

Table 2. Seashore paspalum turf quality ratings for various cultivars in Fayetteville, Ark. in 2009.

Cultivar	Turfgrass quality ^z					Mean
	May	June	July	August	September	
	-----visually rated on a 1-9 scale-----					
UGA 31	5.0	6.0	7.3	7.7	7.7	6.7
UGA 7	5.0	6.0	7.3	7.3	7.7	6.7
UGA 22	4.3	5.7	6.7	8.0	7.7	6.5
Sea Isle 1	4.7	5.3	6.0	7.3	7.0	6.1
Seaspray ^y	4.3	5.7	6.0	7.3	7.3	6.1
SRX9HSCP ^y	4.0	5.3	6.3	7.3	7.7	6.1
Salam	3.7	5.0	6.0	7.3	7.0	5.8
Average	4.4	5.6	6.5	7.5	7.4	6.3
LSD (P=0.05)	NS	NS	0.9	NS	NS	NS

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

^y Seeded seashore paspalum cultivar.