

1997 NTEP Bermudagrass Cultivar Evaluation - 1999 Results

Zac Reicher and Glenn Hardebeck, Department of Agronomy
Bill Lampkins, MacDonald Golf Course, Evansville

Objective

The objective of this study is to determine the survivability and performance of seeded and vegetatively established bermudagrass in Evansville, IN.

Rationale

With genetically improved cultivars, bermudagrass is being used or considered for golf course fairways and athletic fields in southern IN. There has been tremendous genetic improvement in winter survivability and leaf texture for bermudagrass and so this species may now be better adapted to Southern IN than it has been in the past. Additionally, seeded varieties of are now available which will decrease the cost of establishing bermudagrass. However, we are unsure of the long term winter survival of bermudagrass on the northern edge of the transition zone.

How It Was Done

The study was located on the Wessman Par-3 Course in Evansville IN. Roundup was applied to the seed bed and then tilled to a 2 inch depth. A starter fertilizer (8-22-16) was applied prior to seeding at 1.5 lbs P₂O₅ per 1000 sq. ft. On 25 Jun-97, two separate but adjacent studies for seeded types and vegetative types were established. Plot size for each study was 6 ft X 6 ft with 1.5 ft borders and each study contained 3 replications. Nineteen seeded Bermudagrass cultivars were seeded at 0.85 lbs/1000 sq. ft. and then "dimpled in" with tires of a sand rake. Eleven bermudagrass cultivars were plugged with 1.5 in X 1.5 in plugs on 12 inch centers. The seeded varieties were covered with seed cloth to encourage germination, and then the entire area was watered 2 to 3 times daily to encourage germination and establishment. The area was mowed at 1 inch, irrigated to prevent moisture stress, and received 1.0 lb N per 1000 sq. ft. with a 25-4-12 fertilizer on 10 July and 5 Aug. Annual maintenance included mowing at 1 inch once or twice per week, irrigation to prevent dormancy, and 0.5-0.75 lb N per 1000 sq. ft./growing month. This study will continue through the 2001 growing season.

Results to Date

Bermudagrass is sensitive to winterkill, especially in the first winter following establishment. All of the cultivars in our study survived the winter of 1997-98 and again in 1998-99. However, the winters have been fairly mild with limited water, snow, or ice cover on the research plots. The data to date might not reflect survival during a difficult winter.

Vegetative Cultivars

- The vegetative cultivars green-up more quickly in the spring, have provided better cover, and are finer-textured than the seeded cultivars (Table 1).
- OKC18-4, OKC19-9, Tift94, CN2-9, Tifway, Tifgreen, and Midlawn were the top performers in 1999. Mini-Verde is performing poorly in this test because it has a better fit for greens. It is a very dense growing cultivar and does not

grow taller than about 0.25 - 0.5 inch. The poor ratings of Meyer Zoysia are due to its slow cover, averaging only 73% cover by Aug. 1999.

Seeded Cultivars

- OKS-95-1 and Princess were the top two performers in 1999 for the second consecutive year (Table 2). OKS-95-1 is a fine bladed grass that creates a dense turf resulting in high quality ratings. Princess, on the other hand, is somewhat coarser textured and greens up slightly slower than OKS-95-1.
- Significant genetic improvement has occurred with the seeded bermudagrasses. Most of the newer cultivars consistently outperform Arizona Common, which was the initial seeded bermudagrass.

It is still too early to draw definite conclusions from this study which will continue for two more growing seasons.

Table 1. Greenup, cover, color, leaf texture, and visual quality of vegetatively established bermudagrass cultivars in 1999.

Cultivar	Color ^a	Greenup ^b	Leaf texture ^c	Cover ^d	Visual quality ^e						
					May	June	Jul	Aug	Sep	Oct	Avg
OKC18-4	6.3	4.7	6.7	100	4.0	7.3	6.7	7.7	7.7	7.3	6.8
OKC19-9	5.3	6.7	6.3	100	5.3	7.3	7.0	6.7	7.3	7.0	6.8
Tift94 ^f	6.0	3.3	6.3	100	2.7	6.0	7.3	8.3	8.3	8.3	6.8
CN2-9	6.3	4.3	6.0	100	3.3	7.0	7.0	7.3	6.3	7.7	6.4
Tifway ^f	6.0	3.0	7.0	100	2.0	6.3	7.3	8.0	7.0	8.0	6.4
Tifgreen ^f	5.0	3.0	6.7	100	2.7	6.7	6.7	6.7	6.7	8.3	6.3
Midlawn ^f	5.0	7.3	6.3	100	7.0	4.7	6.0	7.3	6.3	6.3	6.3
Cardinal	3.0	7.3	7.7	100	5.7	7.3	7.0	6.3	3.3	6.7	6.1
Shanghai ^f	7.7	4.3	4.7	100	4.0	6.0	5.0	6.0	6.0	5.7	5.4
Mini-Verde ^f	5.7	2.0	8.7	100	2.0	6.0	6.0	5.3	5.3	7.0	5.3
Quickstand ^f	5.0	6.7	4.7	100	5.7	4.3	5.0	5.0	5.7	6.0	5.3
Meyer Zoysia ^f	5.0	8.0	5.0	73	2.0	3.0	3.3	3.0	3.7	2.7	2.9
LSD (0.05)	1.2	1.4	1.1	1	1.7	1.8	1.4	1.2	1.7	1.0	0.7

^a Color was visually rated on 7 July on a scale of 9 to 1 where 9=dark green, 5=acceptable, and 1=chlorotic

^b Greenup was rated visually on 5 May where 1=brown, 5 acceptable, and 9=fully green.

^c Leaf texture was rated visually on 7 July where 1=coarse bladed and 9=very fine bladed.

^d Cover was rated visually on 3 Aug as a percent of the plot covered by bermudagrass.

^e Quality was visually rated on a scale of 9 to 1 where 9=perfect, 5=acceptable, and 1=dead.

^f Commercially available as of 1 May 2000.

Table 2. Greenup, cover, color, leaf texture, and visual quality of seeded bermudagrass cultivars in 1999.

Cultivar	Color ^a	Greenup ^b	Leaf texture ^c	Cover ^d	Visual quality ^e						
					May	June	July	Aug	Sep	Oct	Avg
OKS-95-1 ^f	5.0	6.7	6.0	100	6.0	5.7	7.3	8.0	7.7	6.3	6.8
Princess ^f	5.3	3.3	5.7	100	3.0	7.3	6.7	6.7	8.3	6.7	6.4
Savannah ^f	5.0	6.0	4.7	100	4.7	4.7	5.7	5.3	6.3	6.3	5.5
SW1-11	5.3	2.3	4.7	97	2.0	4.7	4.7	6.7	6.3	6.7	5.2
PST-R69C	5.3	4.3	4.7	95	3.0	5.0	5.7	4.3	4.3	6.3	4.8
Sundevil II ^f	5.0	5.0	4.7	95	4.0	4.3	5.3	5.3	3.7	4.7	4.6
Mirage ^f	5.0	6.0	3.3	100	5.0	4.3	5.0	4.3	3.7	4.7	4.5
Blackjack ^f	5.3	4.3	3.7	100	3.7	4.0	4.0	4.7	6.0	4.3	4.4
Blue-Muda ^f	5.7	4.3	5.0	100	3.7	3.3	4.3	4.3	5.3	4.7	4.3
Majestic ^f	5.0	4.0	4.0	92	3.0	4.0	4.7	4.7	5.3	4.0	4.3
SW1-7	5.3	4.7	4.3	97	3.3	4.0	4.3	5.0	4.3	4.7	4.3
Jackpot ^f	5.0	5.7	3.7	93	4.3	3.7	4.0	4.7	4.0	4.7	4.2
Panama ^f	5.7	4.0	3.7	97	3.0	3.7	3.7	4.3	4.3	5.7	4.1
Shangri-La	5.0	3.7	3.7	87	3.3	3.3	3.7	4.7	5.0	4.0	4.0
Pyramid ^f	5.3	4.7	3.7	87	3.3	4.0	4.0	3.7	4.3	4.0	3.9
J-540	5.3	3.7	4.0	97	3.7	4.0	3.7	4.3	3.3	4.7	3.9
J-1224	6.0	2.7	3.7	90	2.3	3.7	3.7	4.0	3.7	4.7	3.7
Numex-Sahara ^f	5.7	4.0	3.0	93	3.0	3.0	3.7	3.7	3.7	4.0	3.5
AZ Common ^f	4.7	4.3	3.0	88	3.0	3.0	3.3	3.7	4.0	3.0	3.3
LSD (0.05)	NS	2.3	1.5	NS	1.7	1.3	1.6	1.5	1.9	1.2	1.0

^a Color was visually rated on 7 July on a scale of 9 to 1 where 9=dark green, 5=acceptable, and 1=chlorotic

^b Greenup was visually rated on 5 May where 1=brown, 5 acceptable, and 9=fully green.

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^d Cover was rated visually on 3 Aug as a percent of the plot covered by bermudagrass.

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