

## **1997 NTEP Bermudagrass Cultivar Evaluation – 2000 Results**

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### **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 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 seedbed and then tilled to a 2 inch depth. A starter fertilizer (8-22-16) was applied prior to seeding at 1.5 lbs P<sub>2</sub>O<sub>5</sub>/1000 ft<sup>2</sup>. On 25 June 1997, 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 ft<sup>2</sup> 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/1000 ft<sup>2</sup> 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/1000 ft<sup>2</sup>/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. Though all of the cultivars in our study survived the three winters of the study, there was some damage during the winter of 2000-01. However, we cannot determine the extent of damage by the time this report will be published.

#### ***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 continue to be the top performers as in past years. 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.

*Seeded Cultivars*

- OKS-95-1 and Princess were the top 2 performers in 2000 for the third 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.

**Table 1.** Color, greenup, leaf texture, and visual quality of vegetatively established bermudagrass cultivars in 2000.

Cultivar	Color <sup>a</sup>	Greenup <sup>b</sup>	Leaf texture <sup>c</sup>	Visual quality <sup>d</sup>					
				May	June	July	Aug	Sep	Avg
CN2-9	5.7	4.0	7.3	4.0	7.3	7.3	7.7	7.3	6.7
OKC19-9	5.7	4.7	7.3	4.7	7.7	7.0	7.0	7.0	6.7
Tift94 <sup>e</sup>	5.0	4.0	7.3	3.0	7.3	7.3	7.7	7.7	6.6
OKC18-4	6.0	4.0	6.7	4.0	8.0	7.3	7.0	6.3	6.5
Tifgreen <sup>e</sup>	5.0	5.0	7.7	3.3	7.0	7.0	7.7	7.3	6.5
Tifway <sup>e</sup>	5.3	4.7	7.7	3.7	6.3	7.0	7.3	7.3	6.3
Midlawn <sup>e</sup>	5.7	7.0	6.7	6.0	5.3	6.7	7.0	6.0	6.2
Mini-Verde <sup>e</sup>	5.3	3.7	8.7	2.7	7.0	6.0	7.3	6.7	5.9
Cardinal	3.7	6.7	8.3	4.0	5.7	6.7	6.7	6.3	5.9
Shanghai <sup>e</sup>	7.3	4.3	5.3	3.7	6.0	6.0	6.0	5.3	5.4
Quickstand <sup>e</sup>	5.0	6.0	6.0	4.3	5.7	4.7	6.0	5.3	5.2
Meyer Zoysia <sup>e</sup>	4.0	7.3	3.3	3.0	3.7	3.0	4.3	4.0	3.6
LSD (0.05)	1.0	1.5	1.2	1.3	1.6	NS	1.2	1.0	0.7

<sup>a</sup> Color was visually rated on 28 July on a scale of 1 to 9 where 1 = chlorotic, 5 = acceptable, and 9 = dark green.

<sup>b</sup> Greenup was rated visually on 19 Apr on a scale of 1 to 9 where 1 = brown, 5 = acceptable, and 9 = fully green.

<sup>c</sup> Leaf texture was rated visually on 28 July on a scale of 1 to 9 where 1 = coarse bladed and 9 = very fine bladed.

<sup>d</sup> Quality was visually rated on a scale of 1 to 9 where 1 = dead, 5 = acceptable, and 9 = perfect.

<sup>e</sup> Commercially available as of May 2000.

**Table 2.** Color, greenup, leaf texture, and visual quality of seeded bermudagrass cultivars in 2000.

Cultivar	Color <sup>a</sup>	Greenup <sup>b</sup>	Leaf texture <sup>c</sup>	Visual quality <sup>d</sup>					
				May	June	July	Aug	Sep	Avg
OKS-95-1 <sup>e</sup>	5.7	7.0	6.3	4.3	7.0	6.7	6.3	6.7	6.2
Princess <sup>e</sup>	6.3	3.7	6.7	2.3	6.7	6.7	6.7	6.7	5.8
SW1-11	5.7	4.3	6.0	2.0	4.7	6.0	7.3	6.7	5.3
Savannah <sup>e</sup>	6.0	4.7	5.3	3.3	4.0	5.0	6.3	5.7	4.9
PST-R69C	5.3	4.3	5.3	3.3	4.0	4.7	6.0	6.0	4.8
Pyramid	5.3	6.0	5.3	4.0	4.0	4.7	5.0	5.3	4.6
Majestic <sup>e</sup>	5.7	5.0	4.7	3.0	4.3	4.7	5.0	5.7	4.5
Blue-Muda <sup>e</sup>	5.3	5.7	5.0	3.3	4.0	4.0	4.7	5.3	4.3
J-1224	6.0	5.7	5.0	2.7	3.7	4.3	5.3	5.3	4.3
Panama <sup>e</sup>	5.7	5.7	5.0	3.7	3.7	4.0	5.3	5.0	4.3
Sundevil II <sup>e</sup>	5.3	5.0	4.7	3.0	3.3	4.3	5.0	5.3	4.2
Blackjack <sup>e</sup>	5.3	5.7	4.3	3.7	4.3	3.7	3.7	5.0	4.1
J-540	5.3	5.3	4.3	4.0	3.3	3.7	4.3	5.3	4.1
SW1-7	6.0	5.3	5.0	2.7	3.0	4.7	4.7	5.3	4.1
Mirage <sup>e</sup>	5.3	5.0	4.3	3.7	5.0	3.7	3.7	4.7	4.1
Numex-Sahara <sup>e</sup>	5.7	6.0	4.7	4.0	4.0	3.3	4.3	4.3	4.0
Jackpot <sup>e</sup>	5.3	5.7	4.0	3.3	3.7	3.3	4.3	4.7	3.9
Shangri-La	5.3	5.3	5.0	2.7	4.0	3.7	4.7	4.7	3.9
AZ Common <sup>e</sup>	5.0	5.3	4.0	3.3	3.3	3.0	3.7	4.0	3.5
LSD (0.05)	NS	1.5	0.7	0.9	1.3	1.2	1.3	0.9	0.6

<sup>a</sup> Color was visually rated on 28 July on a scale of 1 to 9 where 1 = chlorotic, 5 = acceptable, and 9 = dark green.

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