

2002 NTEP Bermudagrass Cultivar Evaluation – 2004

Zac Reicher

Objective

The objective of this study was to determine the survivability and performance of seeded and vegetatively established bermudagrass for use on golf courses and athletic fields in Indiana.

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. However, the Achilles heel of bermudagrass is winter survival and West Lafayette is more suitable for evaluating this trait.

How It Was Done

Forty-six varieties of bermudagrass were established in June 2002 at the William H. Daniel Research and Diagnostic Center on a silt loam soil. The experiment area was tilled and fumigated prior to establishment to minimize competition from annual grasses and broadleaf weeds. The area was then smoothed and leveled to prepare the seedbed. A starter fertilizer (8-22-16) was applied prior to seeding at 1.5 lbs P₂O₅/1000 ft². Seed rate was approximately 0.5 lb/1000 ft² for the 32 seeded cultivars and the 14 vegetative cultivars were established with 1.5 in by 1.5 in plugs on 12 inch centers. The seeded varieties were covered with AgroFabric to encourage germination, and then the entire area was watered 2 to 3 times daily to encourage germination and establishment. Maintenance on the area is typical of fairways and includes mowing at 0.5 inch 3 times per week, irrigation to prevent moisture stress, and 3 lbs N/1000 ft²/yr (1 lb in June, July, and August).

Results

- Only six of the 46 cultivars survived through two West Lafayette winters with greater than 95% coverage. These cultivars included Patriot, Ashmore, Quickstand, Riviera, CIS-CD6, and SWI-1045 (Table 1). Thus these six cultivars would be the best adapted for areas that have the threat of winterkill.
- Yukon, Midlawn, and TiftNo3 survived with more than 75% cover after two winters and could be included in a list with medium winterkill tolerance.
- Of those cultivars that produced 75% or better survival, Patriot and Yukon had the best overall turf quality.
- Because of the widespread winter damage, only those cultivars that had more than 75% cover were rated throughout in 2004 and this study was terminated in fall of 2004.
- When making cultivar selections, it is best to consult the NTEP web page at www.ntep.org for complete performance data from around the country on cultivars, placing special emphasis on how cultivars perform in IN, IL, KY, MI and/or OH (depending if you are located in northern, central, or southern IN) under the specific maintenance regime you intend for that grass.

Table 1. Color, leaf texture, cover, and quality of 46 bermudagrass cultivars during 2004.

	Estab- lishment	Color ^a		Leaf texture ^b	% Cover ^c	Visual quality ^d				
		Apr	Aug			June	July	Aug	Sep	Avg
Patriot ^e	Veg	1.3	6.7	7.0	100	4.7	7.0	7.7	4.3	5.9
Ashmore ^e	Veg	1.0	2.0	8.7	100	4.3	5.3	5.3	4.3	4.8
Quickstand ^e	Veg	1.0	5.0	6.0	100	3.0	4.7	4.7	5.3	4.4
Riviera ^e	Seeded	1.0	6.0	5.0	100	3.0	4.3	4.3	5.0	4.2
CIS-CD6	Seeded	1.3	4.7	6.0	100	3.0	4.3	4.0	3.7	3.8
SWI-1045	Seeded	1.0	5.3	3.7	97	3.3	4.7	3.7	4.3	4.0
Yukon ^e	Seeded	4.0	5.7	5.7	77	5.0	6.3	5.7	6.7	5.9
Midlawn ^e	Veg	1.7	4.0	6.7	77	5.3	5.0	5.0	5.3	5.2
TiftNo3	Veg	1.0	6.3	5.3	77	2.3	4.0	5.3	4.0	3.9
AussieGreen ^e	Veg	---	---	---	73	---	---	---	---	---
Tifsport ^e	Veg	---	---	---	73	---	---	---	---	---
SWI-1012	Seeded	---	---	---	73	---	---	---	---	---
Sundevil ^e	Seeded	---	---	---	73	---	---	---	---	---
CIS-CD7	Seeded	---	---	---	70	---	---	---	---	---
OKC70-18	Veg	---	---	---	67	---	---	---	---	---
SWI-1014	Seeded	---	---	---	67	---	---	---	---	---
CIS-CD5	Seeded	---	---	---	60	---	---	---	---	---
OR2002	Veg	---	---	---	53	---	---	---	---	---
SWI-1044	Seeded	---	---	---	53	---	---	---	---	---
Sunstar ^e	Seeded	---	---	---	50	---	---	---	---	---
B-14	Seeded	---	---	---	43	---	---	---	---	---
SR9554	Seeded	---	---	---	43	---	---	---	---	---
NuMexSah ^e	Seeded	---	---	---	40	---	---	---	---	---
TiftNo4	Veg	---	---	---	40	---	---	---	---	---
MS-Choice ^e	Veg	---	---	---	33	---	---	---	---	---
Southern Star ^e	Seeded	---	---	---	33	---	---	---	---	---
TiftNo1	Seeded	---	---	---	33	---	---	---	---	---
Tifway ^e	Veg	---	---	---	33	---	---	---	---	---
SWI-1001	Seeded	---	---	---	27	---	---	---	---	---
SWI-1003	Seeded	---	---	---	27	---	---	---	---	---
SWI-1046	Seeded	---	---	---	20	---	---	---	---	---
GN-1 ^e	Veg	---	---	---	13	---	---	---	---	---
SWI-1041	Seeded	---	---	---	13	---	---	---	---	---
Celebration ^e	Veg	---	---	---	10	---	---	---	---	---
Arizona Common ^e	Seeded	---	---	---	7	---	---	---	---	---
SRX9500	Seeded	---	---	---	3	---	---	---	---	---
Transcontinental	Seeded	---	---	---	3	---	---	---	---	---
FMC-6	Seeded	---	---	---	0	---	---	---	---	---
Mirage ^e	Seeded	---	---	---	0	---	---	---	---	---
Mohawk ^e	Seeded	---	---	---	0	---	---	---	---	---
PST-R68A	Seeded	---	---	---	0	---	---	---	---	---
PST-R6LL	Seeded	---	---	---	0	---	---	---	---	---
PST-R6U9	Seeded	---	---	---	0	---	---	---	---	---
Panama ^e	Seeded	---	---	---	0	---	---	---	---	---
Princess ^e	Seeded	---	---	---	0	---	---	---	---	---
TiftNo2	Seeded	---	---	---	0	---	---	---	---	---
LSD (0.05)		1.3	0.2	1.3	56	1.3	1.4	1.6	1.4	1.1

^a Color was rated on 23 Apr (spring green-up) and 29 Aug on a scale of 9 to 1 with 9=dark green and 1=chlorotic yellow.

^b Leaf texture was rated on 29 Aug with 9=fine bladed and 1=coarse bladed.

^c Percent turf cover was rated visually on 27 July.

^d Quality was rated on 8 June, 27 July, 29 Aug and 25 Sep on a 9 to 1 scale with 9=excellent, 5=acceptable and 1=dead.

^e Commercially available as of Feb 2004.