

2002 NTEP Bermudagrass Cultivar Evaluation – 2003 Results

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). This study will continue until 2006.

Results to Date

- Forty-one of the 46 cultivars suffered severe winterkill during 2002-2003. Only Patriot, Mirage, Ashmore, and OKC 70-18 came out of the winter with 70% or more live coverage in spite of almost all cultivars reaching 100% cover by winter of 2002 (Table 1). Another 6 cultivars came out of winter with between 20 and 70% coverage and these cultivars reached 60% or more coverage by July. With a fairly open, dry, and cold winter in 2003-2004, we expected significant winterkill. Not only is West Lafayette on the far north boundary for bermudagrass survival, bermudagrass is especially susceptible to winterkill in its first winter after establishment.
- As expected, quality ratings closely paralleled winter survival and % coverage with Patriot and Mirage leading as the top two in average yearly quality. This is somewhat surprising since Mirage has not performed well during our past winters and summers in West Lafayette.
- Leaf texture also plays a dominant role in quality ratings. Patriot, Mirage, Aussie Green, OR 2002, Ashmore, and OKC70-18 produced the finest leaf texture.
- Yukon, Quickstand, Riviera, and Midlawn are considered our current IN standards, and they performed adequately, finished in the top third of the cultivars.

- 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. Quality, cover, leaf texture, and color of 46 bermudagrass cultivars during 2003.

		Quality ^a				% cover ^b		Leaf texture ^c	Color ^d	
		June	July	Aug	avg	June	July		May	Aug
Patriot ^e	Veg	5.0	8.3	9.0	7.4	77	100	7.3	7.0	5.0
Mirage	Seeded	5.0	7.0	7.3	6.4	80	98	7.3	5.3	5.7
Aussie Green ^e	Veg	2.0	7.0	8.7	5.9	30	97	7.0	7.3	4.0
OR 2002	Veg	2.3	5.3	7.0	4.9	28	87	7.0	5.0	2.0
Ashmore ^e	Veg	4.0	3.0	7.3	4.8	80	90	8.0	3.7	6.0
OKC 70-18	Veg	3.7	4.3	6.0	4.7	70	65	7.3	4.7	4.7
SWI-1012	Seeded	2.3	4.3	5.7	4.1	27	83	4.7	5.3	3.3
Yukon ^e	Seeded	2.7	3.3	6.0	4.0	40	67	6.0	5.7	4.7
Quickstand ^e	Veg	2.7	4.3	4.3	3.8	37	92	4.3	2.7	3.7
SWI-1014	Seeded	3.0	3.7	4.7	3.8	53	73	4.7	6.0	4.7
SWI-1045	Seeded	2.0	4.3	4.3	3.6	8	80	6.0	4.7	2.0
Riviera ^e	Seeded	2.0	3.3	4.7	3.3	23	68	5.7	5.0	3.3
GN-1 ^e	Veg	1.7	3.0	5.0	3.2	3	33	5.7	8.0	1.0
CIS-CD5	Seeded	1.3	2.7	4.7	2.9	10	43	5.3	5.0	1.7
SWI-1044	Seeded	1.7	2.7	4.3	2.9	8	57	6.0	5.3	1.3
SWI-1041	Seeded	1.0	2.7	4.7	2.8	0	33	4.7	5.3	1.0
TifSport ^e	Veg	1.3	3.0	4.0	2.8	2	43	5.7	6.3	1.0
Midlawn ^e	Veg	1.3	2.3	4.0	2.6	2	30	4.7	5.7	1.0
Tift No4	Veg	1.0	2.3	4.3	2.6	0	34	6.7	4.7	1.0
Tift No3	Veg	1.0	2.3	4.0	2.4	0	27	5.7	6.0	1.0
Celebration ^e	Veg	1.3	2.0	3.7	2.3	2	20	3.3	5.0	1.0
CIS-CD7	Seeded	1.3	2.7	3.0	2.3	2	53	3.7	5.0	1.0
Sundevil ^e	Seeded	1.3	2.0	3.7	2.3	2	20	3.7	6.3	1.0
CIS-CD6	Seeded	1.3	2.0	3.3	2.2	2	28	3.7	4.7	1.0
SWI-1003	Seeded	1.0	2.0	3.7	2.2	0	10	5.0	4.7	1.0
B-14	Seeded	1.0	2.0	3.3	2.1	0	5	2.3	5.7	1.0
Southern Star ^e	Seeded	1.0	2.0	3.3	2.1	0	13	3.0	6.0	1.0
Sunstar ^e	Seeded	1.0	2.0	3.3	2.1	0	5	3.3	6.3	1.0
Transcontinental ^e	Seeded	1.0	2.0	3.3	2.1	0	13	3.7	5.0	1.0
Tifway ^e	Veg	1.3	2.0	2.7	2.0	2	17	3.7	4.3	1.0
Tift No1	Seeded	1.0	2.0	2.7	1.9	0	5	4.7	5.0	1.0
Arizona Common ^e	Seeded	1.0	1.7	2.7	1.8	0	5	3.3	5.0	1.0
FMC-6	Seeded	1.0	1.7	2.7	1.8	0	3	4.3	5.3	1.0
NuMex Sahara ^e	Seeded	1.0	1.3	2.7	1.7	0	2	3.3	5.0	1.0
SR 9554 ^e	Seeded	1.0	1.3	2.7	1.7	0	13	3.7	4.3	1.0
SRX 9500	Seeded	1.0	1.7	2.3	1.7	0	2	3.0	5.7	1.0
SWI-1001	Seeded	1.0	1.7	2.3	1.7	0	3	4.0	6.0	1.0
SWI-1046	Seeded	1.0	1.3	2.7	1.7	0	7	4.3	5.0	1.0
PST-R68A	Seeded	1.0	1.3	2.3	1.6	0	5	3.7	5.3	1.0
Panama ^e	Seeded	1.0	1.3	2.3	1.6	0	2	2.7	5.0	1.0
Princess 77 ^e	Seeded	1.0	1.3	2.3	1.6	0	9	4.7	4.3	1.0
PST-R6LL	Seeded	1.3	1.0	2.0	1.4	3	0	2.7	4.3	1.0
MS-Choice ^e	Veg	1.0	1.0	2.0	1.3	0	0	2.7	4.7	1.0
PST-R6U95	Seeded	1.0	1.0	2.0	1.3	0	0	3.0	4.7	1.0
Mohawk ^e	Seeded	1.3	0.7	1.7	1.2	7	0	2.0	3.0	1.0
Tift No2	Seeded	1.0	1.3	1.3	1.2	0	2	2.0	3.3	1.0
LSD (0.05)		0.7	1.3	1.6	0.9	13	25	2.0	1.0	2.2

^a Quality was rated on 5 June, 5 July, and 19 August on a 9 to 1 scale with 9=excellent, 5=acceptable and 1=dead.

^b Percent turf cover was rated visually 5 June and 15 July.

^c Leaf texture was rated on 19 Aug with 9=fine bladed and 1=coarse bladed.

^d Color was rated on 10 May (spring green-up) and 19 Aug on a scale of 9 to 1 with 9=dark green and 1=chlorotic yellow.

^e Commercially available as of Feb 2004.