

2002 NTEP Zoysiagrass Cultivar Evaluation – 2003 Results

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Objective

The objective of this study was to determine the survivability, performance, and susceptibility to *Rhizoctonia* large patch (zoysia patch) of seeded and vegetatively established zoysiagrass for use on golf courses in Indiana.

Rationale

Zoysia is ideal for southern IN fairways and tees because of reduced water, irrigation, and pesticide inputs. Zoysia has long been established vegetatively, but seeded cultivars are now being developed and are commercially available. With the reduced establishment costs of seeded varieties compared to vegetative varieties, zoysia may now fit into budgets of many more golf courses. It is important to evaluate the feasibility of zoysiagrass in terms of winter survivability, summer performance, and susceptibility to *Rhizoctonia* large patch.

How It Was Done

Twenty-four varieties of zoysiagrass were established in the third week of June 2002 at the William H. Daniel Research and Diagnostic Center on a silt loam soil. The experimental 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 11 seeded cultivars and the 13 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 also be inoculated with *Rhizoctonia* large patch (zoysia patch) in fall of 2003 and susceptibility to this disease will be monitored throughout the life of the experiment.

Results to Date

- Fifteen of the 24 cultivars reached 80% coverage or better by July, about a year after their establishment (Table 1). Though zoysia is typically slow to fill, Zenith, PZA 32, and Chinese Common exceeded 94% cover by July of 2003.
- Because quality ratings are largely dependent on coverage early in a study like this, these same cultivars were at the top of the 24 cultivars.
- The performance of the industry standard Meyer was in the middle of the pack, which shows that tremendous genetic improvement has occurred among the zoysiagrass cultivars over the last few years.
- 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 24 zoysiagrass cultivars during 2003.

		Quality ^a				% cover ^b		Leaf texture ^c	Color ^d		
		June	July	Aug	avg	June	July		Apr	Aug	Oct
Zenith ^e	Seeded	5.0	6.7	8.0	6.6	93	97	5.7	3.3	5.0	4.7
PZA 32	Seeded	5.0	5.7	7.7	6.1	93	97	4.7	2.7	4.7	4.3
Chinese Common ^e	Seeded	5.0	5.3	7.3	5.9	93	95	4.3	3.7	4.3	5.3
Zorro ^e	Veg	4.3	5.7	7.3	5.8	80	88	9.0	2.0	4.0	4.3
Companion ^e	Seeded	4.3	5.3	7.3	5.7	88	95	3.0	3.7	4.0	4.3
Emerald ^e	Veg	4.3	5.0	7.3	5.6	82	88	8.3	2.0	4.7	4.0
J-37	Seeded	4.7	4.7	7.0	5.4	88	95	4.3	3.0	4.3	4.7
BMZ 230	Veg	4.0	6.0	5.7	5.2	78	92	2.7	4.7	3.7	3.7
PST-R7LT	Seeded	4.7	3.7	7.0	5.1	82	87	5.3	2.7	5.0	4.3
PST-R7MA	Seeded	4.0	4.3	7.0	5.1	87	93	5.7	3.7	5.0	5.0
DALZ 0102	Veg	4.3	4.0	6.7	5.0	83	93	3.7	3.7	3.0	4.3
PST-R7TH	Seeded	4.7	3.3	7.0	5.0	85	85	5.0	3.3	5.7	4.0
PZB 33	Seeded	4.0	4.3	6.0	4.8	70	87	5.0	3.3	3.7	4.3
PST-R7ZM	Seeded	4.0	3.7	5.7	4.4	77	87	5.3	2.7	4.7	4.3
Meyer ^e	Veg	3.7	3.7	5.0	4.1	58	82	5.7	2.7	5.0	5.7
DALZ 0101	Veg	3.3	3.3	4.7	3.8	55	58	7.3	1.7	6.0	4.0
Himeno	Veg	2.3	3.3	5.0	3.6	37	78	5.0	1.3	6.7	3.7
Zen 400	Seeded ^f	2.0	2.3	4.0	2.8	25	48	3.7	3.7	5.0	4.0
El Torro	Veg	2.0	2.3	3.0	2.4	30	37	2.3	2.3	5.3	5.7
6186	Veg	1.0	2.0	3.0	2.0	0	42	6.3	1.0	4.0	6.7
DALZ 9604	Veg	1.3	1.7	2.0	1.7	3	7	3.0	1.7	5.3	4.3
DALZ 0104	Veg	1.0	1.3	2.3	1.6	0	3	6.0	1.3	4.7	3.7
DALZ 0105	Veg	1.3	1.3	1.7	1.4	2	10	4.0	1.3	4.0	3.3
GN-2	Veg	1.0	1.3	1.3	1.2	0	2	2.3	1.3	3.0	2.0
LSD (0.05)		1.3	2.0	2.3	1.6	27	22	2.2	1.2	1.9	NS

^a Quality was rated on 5 June, 5 July, and 1 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 1 July.

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

^d Color was rated on 18 Apr (spring green-up), 19 Aug, and 1 Oct (winter color) on a scale of 9 to 1 with 9=dark green and 1=chlorotic yellow.

^e Commercially available as of Feb 2004.

^f Zen 400 was available as a seeded cultivar, but we established it vegetatively from a local source for this study.