

1996 NTEP Zoysiagrass Test

Clark Throssell and Dan Weisenberger

Objective

The objective was to evaluate the performance of vegetative and seeded varieties of zoysiagrass in Indiana

Rationale

Zoysiagrass is well adapted for golf course tees and fairways, and lawns in the transition zone in Indiana. New zoysiagrass varieties have been or will soon be introduced to the market including some seeded varieties. It is important to know the survivability, rate of establishment and performance of these varieties so turfgrass managers can make informed decisions regarding their use.

How It Was Done

Eight seeded and 11 vegetative varieties of zoysiagrass were planted on 10 July 1996 at the Purdue Agronomy Research Center on silt loam soil. Seed was spread on plots using a hand shaker jar, lightly raked and rolled. Vegetative varieties were planted using 2 by 2 inch plugs of greenhouse grown zoysiagrass. Plugs were planted on 1 foot centers. A starter fertilizer was applied after seeding/planting at 0.3 lbs. N, 1.5 lbs P₂O₅, and 0.3 lbs K₂O per 1,000 sq. ft. Invasion of *Poa annua* in fall 1996, and spring and early summer 1997 necessitated the use of both preemergence and postemergence herbicides for *Poa annua* control. In 1998 the zoysiagrass was fertilized with 3.0 lbs N per 1,000 sq. ft using urea with 1.0 lb N per 1,000 sq. ft. applied on 28 May, 2 July and 1 Aug. The zoysiagrass was mowed at 0.75 inches three times per week with clippings returned. The site was irrigated to prevent drought stress. In addition to using herbicides to control *Poa annua*, herbicides have been applied to control crabgrass and broadleaf weeds. No insecticides or fungicides have been applied to the zoysiagrass.

Data collected in 1998 were color, spring green-up, leaf texture, percent ground cover in spring, winter color, and monthly visual quality ratings from Apr to Sep.

Results to Date

- The best performing zoysiagrass varieties in 1998 were J-14, J-37, Zen-400, Meyer, Zen-500, El Toro, J-36 and Emerald (Table 1).
- Initially seeded varieties provided more rapid turf cover than vegetative varieties but 2 years after establishment better performing seeded and vegetative varieties both had nearly 100% turf cover.
- HT-210, Victoria, and Z-18 did not survive the winter of 1996-97 and DeAnza and Miyako were severely injured during the winter of 1996-97.
- Seed of Korean Common was very slow to germinate and only a small amount of the seed germinated.
- Several more years of evaluation will be needed before the performance of these varieties of zoysiagrass in Indiana can be more fully determined.

Table 1. Color, spring green-up, leaf texture, percent ground cover in spring, winter color, and mean visual quality rating of zoysiagrass varieties in 1998.

Variety	Establishment ^a method	Color ^b	Spring ^c greenup	Leaf ^d texture	% Ground cover ^e spring	Winter ^f color	Mean visual ^g quality
J-14	v	6.0	6.3	6.0	91.7	4.7	6.0
J-37	s	6.0	7.0	4.0	94.3	3.0	5.7
Zen-400	s	6.0	7.0	4.0	84.7	2.3	5.7
Meyer	v	6.3	6.7	6.7	75.0	4.0	5.6
Zen-500	s	7.0	6.7	4.7	86.7	3.3	5.6
El Toro	v	6.0	6.7	4.7	81.7	5.3	5.4
J-36	s	6.3	7.0	3.0	82.7	3.3	5.3
Emerald	v	7.0	7.0	8.3	68.3	5.0	5.2
Chinese Common	s	6.0	7.7	3.7	91.7	1.0	5.1
Zenith	s	7.0	6.7	4.3	53.3	3.7	4.6
Jamur	v	5.3	7.0	3.7	51.7	5.3	4.3
Dalz 9601	v	7.0	7.0	8.3	36.7	6.0	3.7
Zeon	v	6.3	6.3	8.3	28.3	6.0	3.1
Korean Common	s	6.0	6.5	2.7	25.3	2.0	2.9
Miyako	v	5.7	5.3	3.0	7.7	6.0	2.4
DeAnza	v	6.0	4.5	6.0	4.3	6.0	1.9
Victoria	v	0.0	0.0	0.0	0.0	0.0	1.0
Z-18	s	0.0	0.0	0.0	0.0	0.0	1.0
HT-210	v	0.0	0.0	0.0	0.0	0.0	1.0
LSD (0.05)		0.8	1.3	1.2	17.3	0.6	0.9

^a Designates whether the variety was established from seed (s) or vegetatively (v).

^b Color was determined visually with 1 = light green and 9 = dark green.

^c Spring green-up was determined visually with 1 = dormant and 9 = green.

^d Leaf texture was determined visually with 1 = coarse and 9 = fine.

^e Percent ground cover was determined visually.

^f Winter color was determined visually with 1 = no color retention and 9 = complete color retention.

^g Mean visual quality was determined by averaging Apr to Sep monthly visual quality ratings. A scale of 1 = no living turf, 5 = acceptable turf and 9 = ideal turf was used.