

STOP 1

Dr. James B. Beard

Bentgrass Variety Evaluations. Fourteen bentgrass varieties maintained under daily mowing at 1/4 inch. The north 1/2 of each plot receives 4# of nitrogen per 1,000 sq. ft. per year and the south 1/2 receives 7#.

TABLE 1. BENTGRASS VARIETY PERFORMANCE

East Lansing, Michigan

(10 x 16' plots in 3 reps; planted Oct. 25, 1961, on a loamy soil)

Variety	Quality Rating* (1-best; 9-poorest)		Density Count (Shoots per sq. dm.)	Per Cent Typula Snow Mold Kill	Depth of Thatch (cm.)
	1966	1965	10/1/65	4/8/65	10/25/65
Cohansey (C-7)	2.2	2.1	1137	33.3	1.8
Toronto (C-15)	2.8	1.6	1808	0.0	1.9
C-1 & C-19	3.5	2.4	1653	0.0	2.1
Penncross**	3.6	2.2	1364	0.0	2.0
Congressional (C-19)	3.7	2.1	1798	0.0	1.6
Old Orchard	3.8	2.5	1258	1.3	1.4
Seaside**	4.1	2.7	1250	2.3	1.2
Iagreen	4.1	2.0	1475	0.0	2.4
Arlington (C-1)	4.1	2.7	1367	0.0	1.6
Nimisilla	4.2	4.1	1124	0.0	1.2
Pennlu	4.6	1.9	1483	0.0	1.8
Astoria**	4.9	4.8	881	0.0	1.5
Evansville	5.1	3.5	1811	88.3	2.6
Washington (C-50)	5.2	5.3	1036	15.0	1.8

*Average of monthly quality ratings.

**Varieties established from seed.

The varieties are now in the sixth year of evaluation. The only disease which has been a reoccurring problem is Typhula snow mold. No preventative fungicide program is followed other than for snow mold.

Cohansey and Toronto creeping bentgrasses continue to rank high in overall turf quality through 1966. Penncross ranks as the top seeded bentgrass. Many of the other varieties are declining in quality after five years. Invasion of off type bentgrasses into the less aggressive varieties is increasing while practically no off types are noted in Cohansey, Toronto, and Penncross.

Toronto, Evansville, and Congressional are maintaining a high density. Severe thatching is noted on Evansville and Iagreen. Cohansey, Toronto, and Penncross will develop a thatch problem if not properly managed through frequent cutting, topdressing and aerification. Toronto, Pennlu and Congressional have good spring green-up.

TABLE 2. 1966 BENTGRASS STRAIN EVALUATIONS
East Lansing, Michigan

(4 x 4' plots in 3 reps; planted in August of 1962 on a loamy soil)

Selection	Visual Quality Rating (1-Best; 9-Poorest)
MSU - 28 - Ap	1.5
NJ - 55 - 1	1.5
Springfield	1.5
MSU - 24 - Ap	1.6
NJ - 55- 4	1.8
Pennpar	2.6
MSU - 26 - Ap	2.7
Highland	4.2
Northland	4.5
Holfiar	5.0
Holmes	5.1
Baldwin	5.5
Exeter	7.2
Bore	8.6

Evaluation of Experimental Bentgrasses. Thirty-eight experimental selections in 4 x 4 foot plots are under evaluation for potential commercial use. Two MSU selections, two NJ selections from Rutgers and Springfield from Kansas are ranking high in overall turf quality. Holfiar, a colonial bentgrass which had shown promise, is on the decline. Highland, Northland, Baldwin, Exeter and Bore have been inferior.

STOP 2

Harlan Stoin

High Temperature Growth Reduction Investigations. An important problem with cool season grasses such as the bentgrasses and bluegrasses is the reduction in growth caused by hot summer weather. To better understand this problem it is important to know why the growth of the plants slows down and eventually ceases. Therefore, biochemical studies are underway to determine if there are differences in how these grasses utilize nitrogen within the plant when grown under high temperatures compared to low temperatures. Different rates and sources of nitrogen are also being used to see if these have any effect on the amount of growth reduction that occurs. Much of the work is being done in growth chambers; however heating cables have been placed in bentgrass plots to obtain some field data on these temperature effects.

To date our findings show an overall increase in the soluble nitrogen content of grasses grown under high temperatures. An especially large increase occurs in the content of asparagine. Free ammonia also increases. These findings indicate the possibility that growth of turfgrasses is being affected by ammonium toxicity at high temperatures.