

# NTEP Evaluation of Bentgrass Cultivars for Fairways and Tees



## Research Update

***Bentgrass use in the United States is almost exclusively limited to low-cut, high maintenance turf. Fairway turf can account for 90% of all high maintenance turf on a golf course. In addition, the expansive nature of golf course fairways stretches them over a variety of soil types and microenvironments.***



**T**he National Turfgrass Evaluation Program (NTEP) was initiated in 1980 under the direction of Dr. Jack Murray. NTEP is a cooperative venture between the United States Department of Agriculture (USDA), the Agricultural Research Service (ARS), and the National Turfgrass Federation (NTF). Trials are conducted at hundreds of locations throughout North America and coordinated by Kevin Morris of the USDA in Bethesda, MD.

Bentgrass (*Agrostis spp.*) use in the United States is almost exclusively limited to low-cut, high maintenance turf. The explosion of new bentgrass cultivars provides a variety of options for the golf course superintendent. Fairway turf can account for 90% of all high maintenance turf on a golf course. In addition, the expansive nature of golf course fairways stretches them over a variety of soil types and microenvironments.

New cultivars are being released that are specific for use on finer textured soils, found on fairways, while others are developed exclusively for sand-based putting greens. Still, all cultivars are judged based on their performance relative to Penncross. After 40 years of dominating the bentgrass market, it is hard to argue the benefits of a cultivar that has provided excellent quality in one 3- or 5-year test, when Penncross has performed adequately over 40 years! The objective of this NTEP trial is to evaluate creeping, colonial and dryland bentgrasses for quality under golf course fairway and tee conditions.

### Experimental Methods

Thirty experimental and commercially available creeping and colonial bentgrass cultivars were seeded at 1#/M on May 26, 1993 on a Batavia silt loam pH 7.2. Fertilizer applications are made to supply 2.5 to 3#N/M/yr. Plots are mowed three times per week with lightweight triplex mowers set at 0.4 in. Irrigation is supplied to maintain adequate soil moisture.

Fungicide applications for dollar spot and brown patch control were made on a curative basis and included Sentinell, Daconil, Chipco, and Banner. Visual quality ratings were recorded monthly on a scale of 1 to 9, where 1=poor quality, 6=minimum acceptable quality, and 9=ideal turf. Disease incidence is rated from 0 to 9, where 0=no disease, 3=objectionable level, and 9=severe infestation.

### Results

Following establishment of the trial in 1994, no preventative snow mold control was applied. Snow mold ratings demonstrate substantial differences among bentgrass species and cultivars. Colonial bentgrasses such as Exeter and OM-At-90163 had little incidence, while SR7100 and Tendez were surprisingly infested. Among the creeping bentgrasses, Cato, Providence, Pro/Cup, and BAR WS42102 all demonstrated substantial tolerance to snow mold. Penncross was severely infested with snow mold which led to an uncharacteristically poor spring color rating. However, most cultivars recovered and provided excellent quality in May.

As the season progressed, the cultivars began to show the effects of the heat and humidity. Throughout June, July and August no less than 50% of all cultivars provided acceptable quality. However, Penn G-6, G-2, Cato and Providence maintained excellent quality during the stressful months. G-2 and G-6 had significant incidence of brown patch while Cato and Providence were relatively disease free. The colonial bentgrasses have a particular weakness to brown patch infestations that were evident throughout this trial in 1995. The good thing about the growing season in 1995 was that by late August, the heat stress had subsided and most cultivars recovered and provided exceptional fall color and quality.

### Summary and Conclusions

Several commercially available cultivars such as Providence, Pro/Cup and Penneagle have demonstrated better quality than Penncross for several years. Also, Cato has performed at the top of the trial for the last few years.

The Penn series of G-2 and G-6 displayed the characteristically dense, upright habitat noticed in the A-1 and A-4 selection at putting green height. Observations regarding the "puffy" appearance of the G-series was obvious in 1995 and may require lower mowing heights or additional thatch management in the future.

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Table 1. Data from the National Turfgrass Evaluation Program 1993 bentgrass fairway/tee trial.

Cultivar	Visual Quality							Pest Damage*		
	Spring Color	May	June	July	Aug.	Sept.	Fall Color	1995 Mean	Typhula Snow Mold	Brown Patch
G-6	5.5	7.7	7.4	8.0	7.0	8.1	8.8	7.6	2.3	2.3
Cato	5.2	7.4	7.0	7.6	6.6	7.8	8.5	7.3	0.7	0.7
G-2	5.7	6.9	7.1	7.7	6.7	7.8	8.5	7.3	2.2	2.2
BAR Ws42102	5.2	6.4	6.9	7.5	6.5	7.4	8.1	6.9	1.2	1.2
Providence	5.7	6.8	6.6	7.1	6.2	7.8	8.4	6.9	1.3	1.3
Crenshaw	6.1	7.5	6.3	6.9	6.0	7.2	7.9	6.8	2.8	2.8
Southshore	5.5	6.6	6.6	7.2	6.3	6.9	7.5	6.7	2.7	2.7
P. Links/Putter	6.5	7.4	6.2	6.7	5.9	7.3	8.0	6.7	3.0	3.0
Penneagle	6.6	6.5	6.5	7.0	6.2	7.0	7.6	6.6	1.8	1.8
Trueline	5.7	6.6	6.4	7.0	6.1	6.8	7.4	6.6	4.0	4.0
Lopez	5.7	7.0	6.2	6.8	5.9	6.8	7.4	6.5	3.7	3.7
18th Green	5.2	7.1	6.2	6.8	5.9	6.5	7.0	6.5	1.5	1.5
Pro/Cup	5.7	6.7	6.1	6.6	5.8	7.0	7.6	6.4	1.5	1.5
DF-1	5.5	6.6	5.9	6.5	5.7	7.2	7.8	6.4	3.3	3.3
BAR As493	5.2	7.7	5.6	6.1	5.3	6.6	7.2	6.3	2.7	2.7
ISI-At-90162	5.7	7.4	5.6	6.1	5.3	6.8	7.4	6.3	2.7	2.7
Penncross	5.7	7.4	5.6	6.0	5.3	6.6	7.2	6.2	3.2	3.2
OM-At-90163	5.7	7.1	5.5	5.9	5.2	7.0	7.6	6.1	1.5	1.5
SR 7100	7.0	7.5	5.2	5.7	5.0	6.7	7.3	6.0	3.2	3.2
Med 20685	6.1	6.7	5.4	5.9	5.2	6.7	7.2	6.0	4.5	4.5
Med 20695	5.5	7.0	5.3	5.8	5.0	6.8	7.4	6.0	2.7	2.7
Med 21149	5.8	7.1	5.4	5.8	5.1	6.4	7.0	6.0	3.5	3.5
Med CB 46-2	5.5	7.1	5.5	6.0	5.2	5.6	6.1	5.9	4.0	4.0
Med 20556	5.9	7.1	5.1	5.6	4.9	6.7	7.3	5.9	3.3	3.3
Med 20686	5.7	7.1	5.2	5.7	5.0	6.4	7.0	5.9	4.2	4.2
Exeter	6.1	7.0	5.2	5.6	4.9	6.6	7.1	5.8	0.8	0.8
Med 20693	5.6	7.1	5.1	5.5	4.8	6.5	7.0	5.8	3.3	3.3
Tendez	5.7	7.2	4.8	5.3	4.6	6.7	7.2	5.7	2.0	2.0
Med 46-1	5.6	7.0	5.1	5.5	4.8	5.3	5.8	5.5	3.0	3.0
Seaside	6.4	6.4	3.8	4.2	3.6	5.3	5.8	4.7	2.2	2.2
LSD (0.05)	0.5	0.7	0.4	0.5	0.8	0.6	0.4	0.3	0.4	0.6

\* Disease incidence rated on a scale of 0 to 9, where 0=no damage, 3=objectionable amount of injury, 9=severe injury.

### Short Cutts

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are involved in teaching the lectures and laboratories. Class enrollment is limited to 75 participants.

A pass/fail final exam is given at the end of the course to assess achievement of the course's educational goals from both the instructor's perspective as well as from the student's perspective. A Certificate of Completion is awarded at the end of the course.

The Short Course satisfies the New York State requirement for the 30-hour eligibility course for pesticide certification and 15 pesticide recertification credits are given upon course completion.

If you have any questions or would like to receive a registration form contact Joann Gruttadaurio, Short Course Director, at (607) 255-1792. Registration forms will be mailed to you in late October.

### Pest Watch

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Typhula blight are not always effective against pink snow mold. Among the better choices for fungicide applications are chlorothalonil (e.g., Daconil 2787 40F) applied at 8 oz/1,000 sq. ft. or propiconazole (Banner 1.1E) applied at 4 oz/1,000 sq. ft. These fungicides are usually applied in late October to early December. Banner should be applied toward the early part of that window whereas Daconil may be applied in early December prior to snow cover.

In the spring, be sure to rake out any diseased areas to facilitate drying and fertilize to promote turfgrass growth. Snow molds generally are not devastating, but, if left untreated, could destroy vast areas of turf. So take some time now to prepare your turf for next spring.

ERIC NELSON  
DEPT. OF PLANT PATHOLOGY

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