

# 1996 Turfgrass Performance Review for Minnesota

By Troy D. Carson, Donald B. White and Brad Pedersen  
*University of Minnesota*

The University of Minnesota participated in two continuing National Turfgrass Evaluation Program (NTEP) tests during 1996.

NTEP was established by the USDA in 1980 as a means to provide breeders, seed producers, turf professionals and consumers with an objective evaluation of commercially available turfgrasses. Each trial is performed at up to 40 sites across the country. Tests have been performed on *Poa pratensis* (Kentucky bluegrass), *Lolium perenne* (perennial ryegrass), *Festuca arundinacea* (turf-type tall fescue), *F. rubra rubra* (creeping red fescue), *F. rubra commutata* (chewings fescue), *F. longifolia* (hard fescue), and *F. ovina* (sheeps fescue), *Buchloe dactyloids* (buffalograss), *Cynodon dactylon* (Bermudagrass), *Zoysia matrella* var. *japonica* (zoysiagrass) and *Agrostis* spp (bentgrasses). Each site selects the management program to be used setting the fertility rate, mowing height and irrigation regime that relate to trial standards, and these cultural practices are included in each NTEP report.

Including the two trials conducted during 1996, the University of Minnesota has participated in many trials over the last 26 years that NTEP has been in existence. These trials provide valuable information for those involved in turfgrass management in Minnesota and other northern regions. One unique and important aspect of our site is that it is generally the coldest in the nation and provides the best information on the winter hardiness of varieties.

We are currently evaluating the 1993 Bentgrass Green Test on native soil and the 1995 Kentucky Bluegrass Test (med.-high maintenance). Each test is evaluated for five years after seeding. The 1996 growing season was the first full year of evaluations for the Kentucky bluegrasses and the third year of evaluations for the bentgrasses.

Each test is evaluated monthly for up to 37 characteristics. Performance ratings conducted here include Overall Quality (monthly during growing season), Spring Green-up, Genetic Color, Leaf Texture, Seedling Vigor) only seeding year), Spring, Summer and Fall Density, Spring, Summer and Fall Percent Living Ground Cover, Winter Kill and Disease Incidence (especially dollar spot for the bentgrass test). Ratings are done on a scale of 0-9 with 9 = ideal turf.

As you examine the rating tables that follow, it is helpful to know that many of the cultivars listed have not been given a name yet. Those that are not named generally have a number or a letter and number combination to designate one cultivar from another. If you are interested in an unnamed cultivar, watch for the experimental designation to follow the name of new cultivars in coming advertisements. Also note in the bentgrass table that many newly named cultivars are followed by the experimental name in parenthesis.

## 1993 Bentgrass Green Test

The bentgrass test was seeded in the fall of 1993 and data

has been collected over the last three years. Only 1996 data are presented here. The initial planting included 28 different varieties, but data is now collected on only 27. The variety Tendez, a colonial bentgrass, did not survive at the green height of cut and was quickly invaded by the surrounding creeping bentgrass and *Poa annua* present as seed in the soil.

Table 1 – 1996 Bentgrass Mean Quality

Name	Quality Mean
Penn A-1 (A-1).....	6.3
Penn G-2 (G-2).....	6.3
Cato .....	6.0
Penn A-4 (A-4).....	5.9
Penn G-6 (G-6).....	5.8
Loft's L-93 (L-93).....	5.8
BAR WS 42102 .....	5.4
Providence .....	5.4
Trueline.....	5.4
Imperial (Syn 92-5-93).....	5.3
ISI-Ap-89150.....	5.3
Pennlinks .....	5.2
MSUEB .....	5.2
SR 1020.....	5.2
Syn 92-2-93 .....	5.1
Century (Syn 92-1-93).....	5.1
Regent .....	5.0
PRO/CUP .....	5.0
Lopez .....	5.0
Penncross.....	4.9
Mariner (Synn-1-88).....	4.8
DG-P .....	4.7
Seaside .....	4.6
Crenshaw.....	4.6
18th Green .....	4.6
LSD Value* .....	0.9

\*To determine statistical differences among entries, subtract one entry's mean from another entry's mean. Statistical differences occur when this value is larger than the corresponding LSD Value (LSD @ 0.05).

Of all the categories rated, only one, Overall Quality, exhibited any significant differences. Also, one variety did stand out with dollar spot.

The two top rated bentgrasses for Overall Quality in 1996 were Penn A-1 and Penn G-2. However, as you can see from Table 1, neither was significantly different from Cato, Penn A-4, Penn G-6, Loft's L-93, Providence, BAR WS 42102, Trueline or Southshore.

One other rating that stood out was the dollar spot rating. Although most exhibited substantial dollar spot resistance, Penn A-1 received a perfect rating of 9 over all

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replicates on two rating dates. All other ratings showed little statistical difference between the varieties in the test.

## 1995 Kentucky Bluegrass Test (med.-high maintenance)

The Kentucky bluegrass test was seeded in September 1995. One hundred three different varieties are included in this test. With 3 replicates per variety, there were a total of 309 plots seeded. Ratings are conducted on a monthly basis throughout the growing season and then compiled for statistical analysis.

During the establishment of the Kentucky bluegrass, *Poa annua* was a major competitor that reduced the Percent Living Ground Cover rating of many of the varieties. Those varieties with the highest Seedling Vigor rating tended to be the ones with the highest Percent Living Ground Cover rating. This is because they didn't give the *Poa annua* a chance to become established as a major competitor in the stand. There are, however, some varieties that had a low Seedling Vigor rating but a good percent Living Ground Cover rating. These varieties may have the ability to outcompete *Poa annua* as the stand matures.

For Overall Quality, HV 130 was the top rated variety; however, it was not statistically different from 12 others: Wildwood, NJ 1190, Unique, Allure, PST-A418, Chateau, PST-P46, Glade, Ba 81-058, PSt-638, Bartitia, or NJ-54. (See Table 2)

Genetic Color differences were significant and an important component of overall quality. The variety with the darkest color was PST-A418. Although it was not statistically different from six other varieties, it was the only one to consistently receive a rating of nine for all three replicates. Only five other plots received a rating of nine and no other variety had more than one plot rated a nine. Although a dark genetic color is what is often sought, we observed some varieties that might be too dark, appearing at times to be wilted or in drought stress even when they were not. One interesting observation in regard to the color ratings is that 13 of the top 16 are not as of yet named. This may show the heavy selection for and advance in dark color that has taken place since the last test.

The top rated for Seedling Vigor, Kenblue, was not significantly different than Haga, Baronie or Nimbus. However, Kenblue is also of interest because it was rated near the top in all but two categories, Genetic Color and Overall Quality, the two areas probably most used in choosing a variety for planting. Under our conditions, if quality or color are not important, Kenblue may be a good choice. However, previous studies indicated that Kenblue might be less cold hardy than other varieties.

When all evaluated ratings are taken into account, the top varieties for 1996 include Wildwood, HV 130, PST-P46, Glade, Limousine, America, Ba 81-058, Unique, SR2109, Classic and Bartitia. Seven of these were also among the top rated for overall quality.

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Table 2 — 1996 Kentucky Bluegrass Mean Quality

Name	Quality Mean
HV 130 .....	6.9
Wildwood .....	6.7
NJ 1190 .....	6.7
Unique .....	6.7
Allure.....	6.7
PST-A418 .....	6.5
Chateau .....	6.5
PST-P46.....	6.5
Glade.....	6.4
Ba 81-058 .....	6.4
PST-638 .....	6.3
Bartitia .....	6.3
NJ-54 .....	6.3
MED-1497.....	6.2
SR 2100 .....	6.2
Limousine.....	6.2
ZPS-2572.....	6.2
Ba75-173.....	6.2
Blacksburg.....	6.2
Ba 81-270 .....	6.1
Midnight.....	6.1
SR 2109 .....	6.1
Ba 73-373 .....	6.1
Shamrock.....	6.0
Eclipse .....	6.0
J-1936 .....	6.0
VB 16015.....	6.0
PST-B3-180.....	6.0
America .....	6.0
BAR VB 3115B .....	6.0
Marquis .....	6.0
MED-18.....	6.0
TCR-173B.....	6.0
Pick-855 .....	6.0
SR 2000 .....	6.0
Ba 79-260 .....	6.0
PST-B2-42 .....	6.0
Platini.....	6.0
Princeton 105 ...	6.0
Caliber .....	6.0
J-2579 .....	6.0
Ba 87-102 .....	6.0
H86-690 .....	6.0
PST-B0-141.....	6.0
ZPS-309.....	6.0
NJ-gd .....	5.9
MED-1580.....	5.9
Ascot .....	5.9
Ba 81-113 .....	5.9
Ba 75-163 .....	5.9
Sodnet.....	5.9
Challenger.....	5.9
ZPS-21283.....	5.9
Pick 8.....	5.9
Coventry .....	5.9
Ba 81-227.....	5.9
Livingston.....	5.9
Ba 77-102.....	5.8
Classic.....	5.8
J-1567.....	5.8
Jefferson.....	5.8
Fortuna .....	5.8
Pick-3581 .....	5.8
Haga .....	5.8
BAR VB 233.....	5.8
LTP-621 .....	5.8
Raven .....	5.8
Award.....	5.8
J-1576.....	5.8
Baron .....	5.7
Ba 70-060.....	5.7
PST-A7-245A .....	5.7
ZPS-429.....	5.7
Baronie .....	5.7
NuGlade.....	5.7
Abbey .....	5.7
Sidekick .....	5.7
PST-A7-60.....	5.7
NuStar .....	5.6
J-2582.....	5.6
Ba 81-220.....	5.6
Conni .....	5.6
Nimbus .....	5.6
Ba 75-490.....	5.6
A88-744.....	5.6
Lipoa .....	5.6
SRX 2205.....	5.6
Ba 76-372.....	5.6
BAR VB 5649.....	5.5
Cardiff.....	5.5
DP 37-192.....	5.5
HV 242 .....	5.5
Baruzo.....	5.4
LKB-95.....	5.4
J-1555.....	5.4
J-1561.....	5.4
Ba 76-197.....	5.2
PST-BO-165.....	5.2
BAR VB 6820.....	5.0
MED-1991.....	5.0
Compact.....	5.0
LTP-620 .....	5.0
Kenblue.....	4.7
LSD Value.....	0.6

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Adjacent to the NTEP Kentucky bluegrass, Dr. Nancy Ehke has planted some selections from her Kentucky bluegrass and perennial ryegrass breeding program. This enables comparison of her selections to many of the best varieties available.

Each year that a test is conducted, NTEP compiles a report for that evaluation year. At the completion of each test, a final report is published which compiles all evaluations over all years and gives a much more accurate picture of how the varieties perform over time. If you would like more detailed information on these tests or others, reports can be purchased from NTEP.\*

\* \* \*

\*Kevin Morris, NTEP Beltsville Ag. Res. Center-West, Bldg. 002, Room 13, Beltsville, MD 20705. Phone: (301) 504-5125. E-mail: kmorris@asrr.arsusda.gov

The monthly MGCSA meeting in October 1997 is scheduled to be at the Les Bolstad University of Minnesota Golf Course. We hope to include a field day at the University Research Fields and Demonstration Gardens where these tests and other areas of research can be observed. We hope that many of you will be present and look forward to seeing you in October.



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