



Creeping Bentgrass Performance with Reduced Fungicide Inputs on Greens, 2011

Researchers: Chicago District Golf Assoc. - Derek Settle, Tim Sibicky, Nick DeVries with 11 Midwest Regional North Central Region University Collaborators (NCERA)

Objective: Determine the performance of creeping bentgrass cultivars under reduced fungicide inputs for dollar spot on golf greens.

Collaborating NCERA Investigators: Qi Zhang, North Dakota State Univ.; Ken Diesburg, Southern Illinois Univ.; Doug Soldat, Univ. of Wisconsin; Brian Horgan, University of Minnesota; David Gardner, The Ohio State Univ.; Dennis Martin, Oklahoma State Univ.; Terry Riordan, Univ. of Nebraska; Kevin Frank, Michigan State Univ.; Jack Fry, Kansas State Univ.; Nick Christians, Iowa State Univ.; Brad Fresenburg, Univ of Missouri.

Background: The CDGA is collaborating with North Central Regional scientists from 11 universities who are conducting this national bentgrass variety trial to benefit golf courses in as many states. Creeping bentgrass (*Agrostis stolonifera*) is used for golf greens in the mid- to northern United States. Many newer varieties exist, yet information on their disease susceptibility remains largely unknown in Chicago's humid environment. Newer varieties are available with improved visual quality comparable to the Penn series semi-dwarf bents. For example, Penn A-1 and Penn A-4 were released in the 1990s and have become popular on Chicago's new or renovated golf green surfaces. However, both are highly susceptible to dollar spot (*Sclerotinia homoeocarpa*) and/or brown patch (*Rhizoctonia solani*). At study end we will better understand improved genetic traits (disease resistance) of new bentgrass varieties.

Materials and Methods: Twenty-seven varieties of creeping bentgrass were arranged in a randomized split-block design with 3 replications. Bentgrasses were seeded 15 September, 2009. Plots are 5 ft. by 10 ft. and irrigated as needed. In spring 2010 varieties were established at 0.5 inch mowing height with 0.2 inch by summer. In spring 2011 no winter injury was observed and plots were with complete cover. Whole plots are bentgrass varieties and split plots are curative fungicides for dollar spot. Curatively, Daconil Ultrex 3.2 oz. + Emerald 0.18 oz. is applied to all varieties when resistant 'Declaration' reaches 5% damage. Curative fungicides were not applied in 2011. After the July 4 weekend wilt injury prevented further data collection.

Table 1. Commercial bentgrass varieties tested for a low input golf green in Lemont, IL in 2010.

Entry #, variety name	Commercial source	Entry #, variety name	Commercial source
1. L-93	Jacklin Seed	14. Penn G-6	Tee-2-Green
2. T-1	Jacklin Seed	15. 007	Seed Research of Oregon
3. Alpha	Jacklin Seed	16. MacKenzie	Seed Research of Oregon
4. Putter	Jacklin Seed	17. Tyee	Seed Research of Oregon
5. Southshore	Jacklin Seed	18. SR 1150	Seed Research of Oregon
6. Kingpin	ProSeeds	19. Memorial	Scotts
7. Crenshaw	ProSeeds	20. Independence	Lebanon
8. Imperial	ProSeeds	23. Declaration	Lebanon
9. Century	ProSeeds	24. LS-44	Links Seed
10. Penncross	Tee-2-Green	25. Bengal	Barenbrug USA
11. Penn A-4	Tee-2-Green	26. CY-2	DLF International
12. Crystal Bluelinks	Tee-2-Green	27. Benchmark	DLF International
13. Penn A-1	Tee-2-Green		

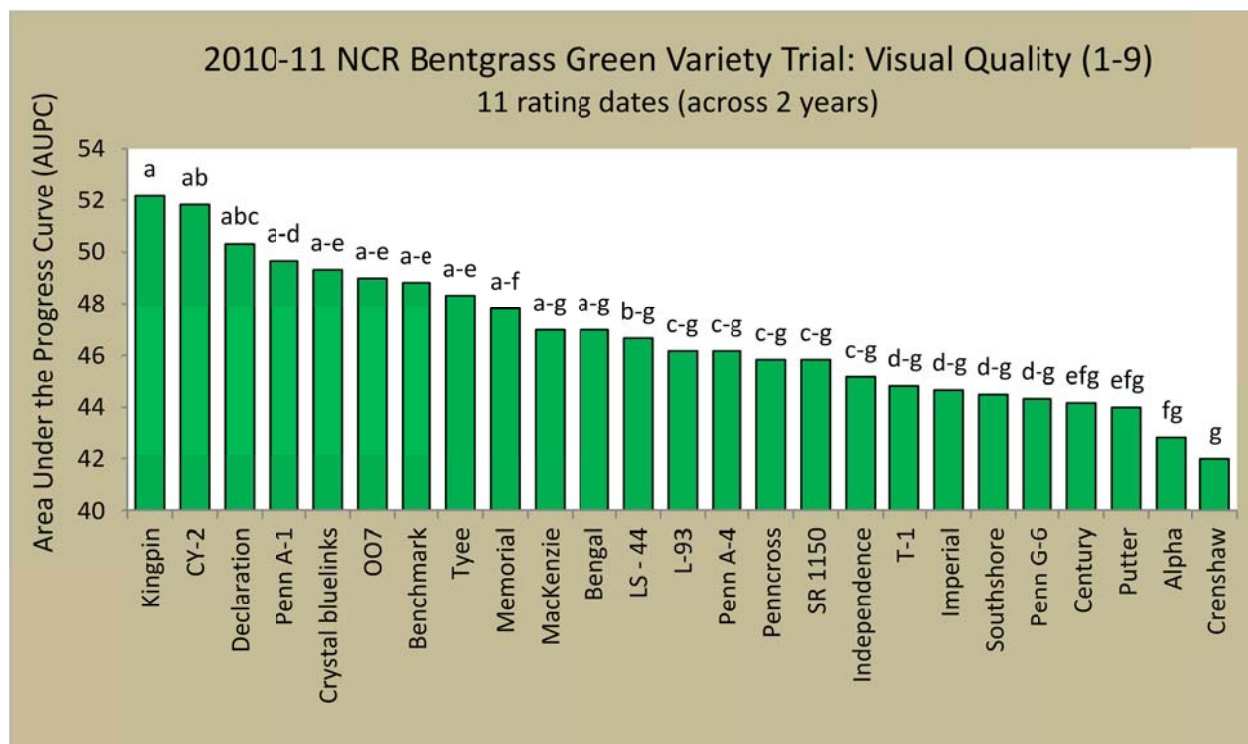


Figure 1. Visual Quality. Best varieties were Kingpin, CY-2 and Declaration. All are highly resistant to dollar spot. Worst variety was Crenshaw. Other creeping bentgrass varieties with poor visual quality were susceptible to dollar spot and included Alpha, Putter and Century. NCERA green variety trial, Sunshine Course, Lemont, IL in 2011.

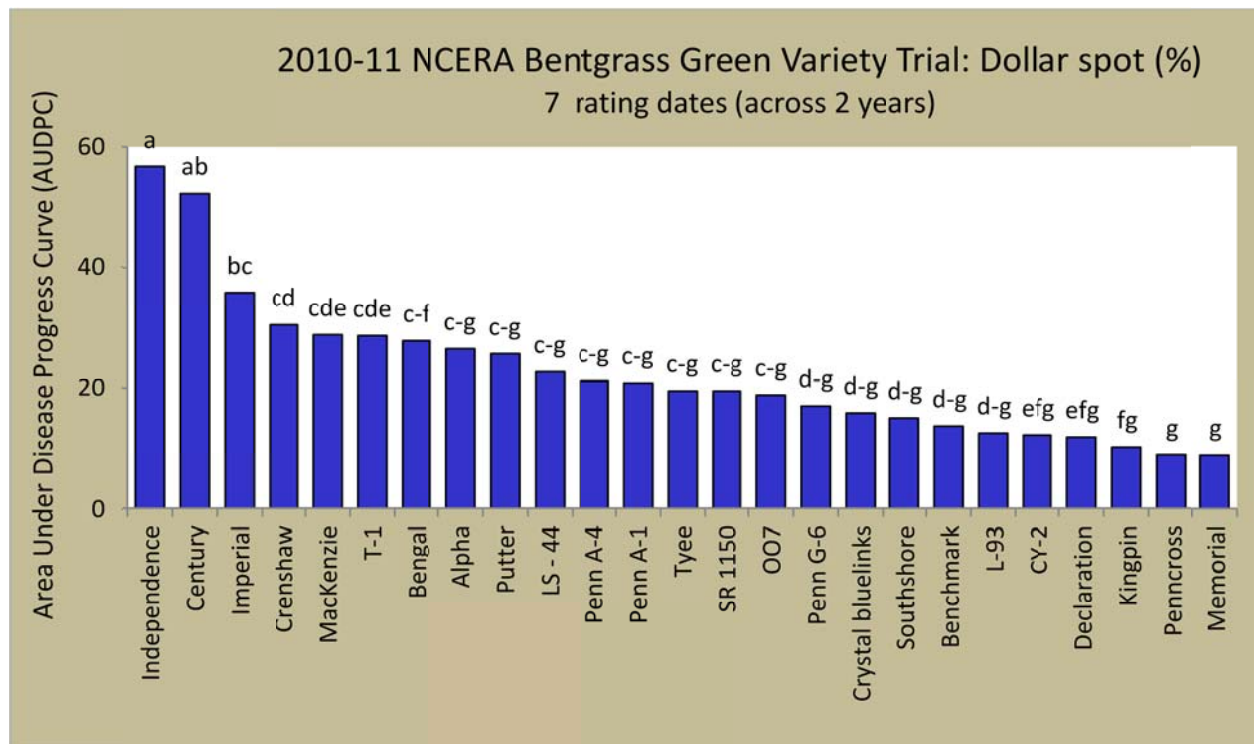


Figure 2. Dollar spot. Most susceptible bentgrass varieties included; Independence, Century, Imperial, Crenshaw. Tendency of varieties with most resistance included, Memorial, Penncross, Kingpin, Declaration, CY-2, L-93 and Benchmark. NCERA green trial, Sunshine Course, Lemont, IL in 2011.



Image 1. In mid-May the NCR green had good color, Sunshine Course, Lemont, IL. *Settle 5-12-11*



Image 2. In June dollar spot effects increased on susceptible varieties, Lemont, IL. *Settle 6-17-11*



Image 3. A mini-field day in late June gave good visual differences in dollar spot disease and visual quality among creeping bentgrass varieties. Sunshine Course, Lemont, IL. *Settle 6-24-11*