



Creeping Bentgrass Performance with Reduced Fungicide Inputs on Greens

Researchers: Chicago District Golf Assoc. - Derek Settle, Tim Sibicky, Nick DeVries with 11 Midwest Regional 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.; John Stier, Univ. of Wisconsin; Brian Horgan, University of Minnesota; David Gardner, The Ohio State Univ.; Dennis Martin, Oklahoma State Univ.; Terrance 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: Creeping bentgrass (*Agrostis stolonifera*) is extensively used for golf greens throughout the mid- to northern United States. It is typical for turfgrass variety trials to control all pests – “a beauty contest” and this can limit information on inherent problems. One argument is that golf greens already have high inputs and so information on disease susceptibility is not so important. However, this is short sighted since newer semi-dwarf bentgrass varieties are now available with genetic traits that rival Penn A-1 and Penn A-4. Both were released in the 1990s and are popular on Chicago’s new or renovated golf green surfaces, but Penn A-4 (a beauty) in Chicago’s environment is susceptible to dollar spot (*Sclerotinia homoeocarpa*), brown patch (*Rhizoctonia solani*) and Bipolaris leaf spot. Newer varieties such as ‘Declaration’ have better resistance to dollar spot and information on other pests is needed. The CDGA is collaborating with North Central Regional scientists from 11 universities who also are conducting this national bentgrass study to benefit golf courses in as many states.

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. 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 needed through August, 2010.

Results: Visual quality at establishment, Black cutworm damage

- Visual Quality. Curative fungicide treatments were not needed through August, 2010. Quality was primarily influenced by establishment. Most varieties established well. Poor quality/establishment was associated with; L-93, Alpha, Penn G-6, Putter. (Fig. 1)
- Black Cutworm. Cutworms negatively affected plots in August. Differences in feeding preference were found to exist and T-1 had greatest injury. Century had least injury and other varieties that tended to have less injury included; Crenshaw, Memorial, Penn G-6, and Crystal bluelinks. (Fig. 2)

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. Tye | 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. Curative fungicide treatments were not needed through August, 2010. Quality was primarily influenced by establishment and resultant density. Most varieties established well, but poor quality/establishment was associated with L-93, Alpha, Penn G-6, and Putter. NCERA trial at Sunshine Course, Lemont, IL in 2010.

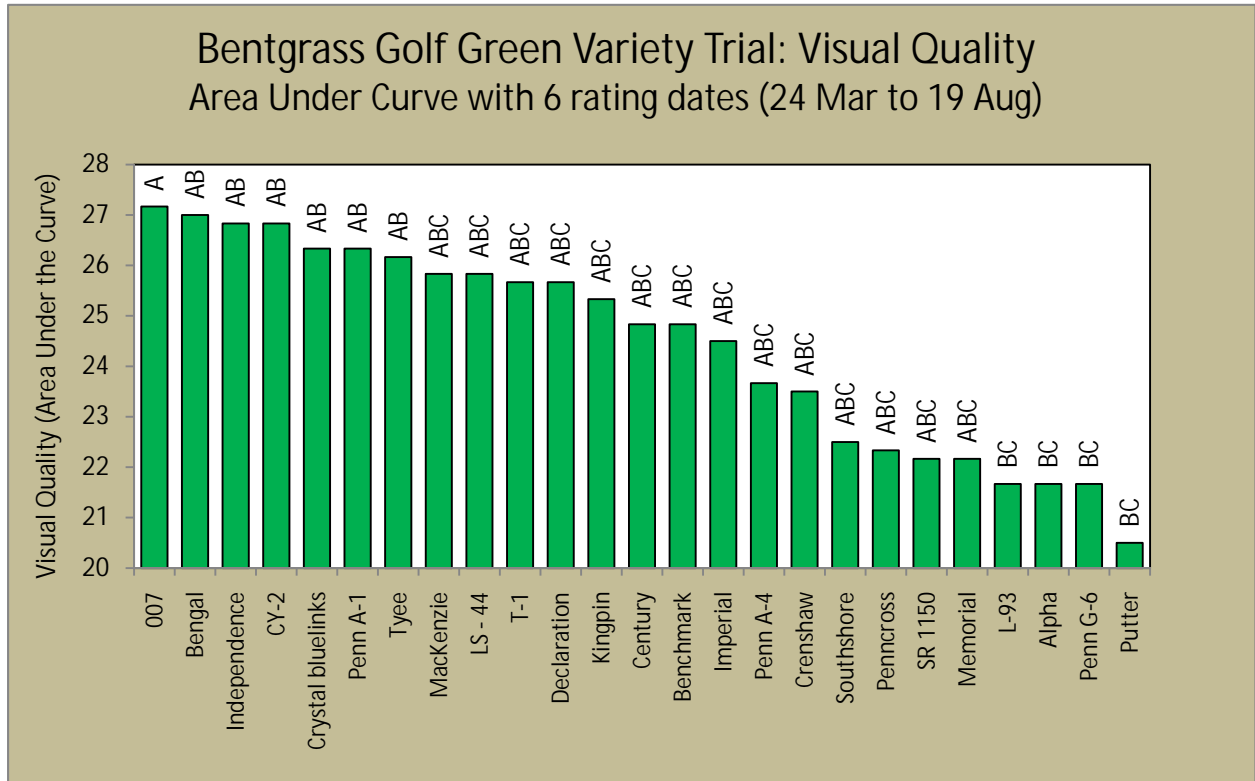


Figure 2. Cutworms negatively affected plots in August. Differences in feeding preference were found to exist and T-1 had greatest injury. Century had least injury and other varieties that tended to have less included; Crenshaw, Memorial, Penn G-6, and Crystal blueinks. NCERA trial at Sunshine Course, Lemont, IL in 2010.

