

Olsen Seed Perennial Ryegrass Cultivar Trial – 2006 Summary

Cale A. Bigelow and Glenn Hardebeck

Objective

To evaluate six perennial ryegrass cultivars maintained a ½ inch mowing height and moderate annual nitrogen applications in central Indiana.

Rationale

Perennial ryegrass is used for golf course tees and fairways and some highly maintained athletic fields because it can tolerate relatively short mowing heights and traffic. Perennial ryegrass use has been problematic due to such problems as disease susceptibility. This experiment is being conducted to evaluate the performance of improved perennial ryegrass cultivars that were not included in the 2004 NTEP trial to further aid in cultivar selection for Indiana and the cool-humid region.

How It Was Done

Six perennial ryegrass cultivars were seeded on 26 Sept. 2005 at the William H. Daniel Research and Diagnostic Center on a silt loam soil. Seeding rate was 5.0 lbs per 1000 ft² and seed was spread using a hand shaker jar. After seeding the experiment was lightly raked and a starter fertilizer (6-24-24) was applied at the rate of 1.5 lbs P₂O₅ per 1000 ft². The area was covered with a germination blanket following seeding to prevent washing of seed and mixing of varieties. An additional nitrogen application was made with urea (46-0-0) at 1.0 lbs N per 1000 ft² on 26 Oct 2005. Plots were maintained under a typical fairway maintenance regime. The mowing height were ½ inch, mowed 3x per week. The annual fertilization was 3.0 lbs. N per 1000 ft² with 1 lb applied in mid-May, 1 lb in mid-September, and 1.0 lb. in early November. In the absence of significant rainfall, plots were irrigated by an overhead irrigation system to prevent stress and promote growth.

Data collected included: turfgrass quality 1-9 (1 = poor, 9 = optimum greenness, density and uniformity and 5 is acceptable), color (1 = brown turf, 9 = dark green) and percent of the plot area covered by the desired species following establishment (2005).

Results to Date

- In 2005 during establishment there were no statistical differences among cultivars for establishment, visual quality or color (Table 1).
- In 2006 there were not differences among cultivars for mean annual quality (Table 2). There were, however, a few differences in Sept. with separation of Galileo and Covet.
- For visual color (Table 3), Galileo, Michelangelo, Newton and Whitney tended to be darker green than Covet and Edison.

Acknowledgements

This research made possible by grant-in-aid support from Olsen Seed Co. and the Midwest Regional Turf Foundation.

Table 1. Visual percentage cover, quality and color ratings for six experimental perennial ryegrass cultivars five weeks after seeding (26 Sept., 2005).

| Cultivar | Ground Cover † | Quality ‡ | Color |
|--------------|-----------------|---------------------------------------|-------|
| | ----- (%) ----- | ----- visual rating (1-9 scale) ----- | |
| Covet | 96.3 a * | 6.7 a | 7.7 a |
| Edison | 96.0 a | 6.7 a | 8.0 a |
| Galileo | 95.3 a | 6.3 a | 7.3 a |
| Michelangelo | 95.3 a | 6.0 a | 7.3 a |
| Newton | 97.0 a | 6.0 a | 7.0 a |
| Whitney | 97.0 a | 6.5 a | 7.5 a |

† Percentage ground cover was visually assessed on a 0-100 % linear scale where 0 = bare soil and 100 = full turf cover.

‡ Turfgrass quality was visually assessed on a 1 to 9 scale where 1=bare soil, brown turf, 9=optimum greenness, density. Color was visually assessed on a 1-9 scale where 9 = darkest green.

* Means in the same column followed by the same letter are not significantly different according to Fisher's protected t-test (P<0.05).

Table 2. Visual turfgrass quality for six experimental perennial ryegrass cultivars for the 2006 growing season.

| Cultivar | Quality † | | | | | | | Mean |
|--------------|---------------------------------------|-------|-------|-------|--------|-------|-------|-------|
| | May | June | July | Aug. | Sept. | Oct. | Nov. | |
| | ----- visual rating (1-9 scale) ----- | | | | | | | |
| Covet | 5.3 a* | 6.3 a | 6.0 a | 5.7 a | 5.7 b | 6.7 a | 6.7 a | 6.0 a |
| Edison | 6.0 a | 6.7 a | 6.7 a | 6.3 a | 6.3 ab | 7.0 a | 7.0 a | 6.6 a |
| Galileo | 6.0 a | 6.7 a | 6.7 a | 6.7 a | 7.3 a | 7.7 a | 7.7 a | 7.0 a |
| Michelangelo | 6.0 a | 6.3 a | 6.3 a | 6.3 a | 6.0 ab | 7.0 a | 6.7 a | 6.4 a |
| Newton | 5.7 a | 6.7 a | 6.7 a | 6.7 a | 6.3 ab | 7.0 a | 7.0 a | 6.6 a |
| Whitney | 5.7 a | 7.0 a | 6.7 a | 5.7 a | 6.3 ab | 7.3 a | 7.0 a | 6.5 a |

† Turfgrass quality was visually assessed on a 1 to 9 scale where 1=bare soil, brown turf, 9=optimum greenness, density.

* Means in the same column followed by the same letter are not significantly different according to Fisher's protected t-test (P<0.05).

Table 3. Visual color ratings of six experimental perennial ryegrass cultivars for the 2006 growing season.

| Cultivar | Color † | | | | Mean |
|--------------|---------------------------------------|--------|-------|--------|--------|
| | May | July | Sept. | Nov. | |
| | ----- visual rating (1-9 scale) ----- | | | | |
| Covet | 5.7 a* | 6.3 b | 7.0 a | 7.3 b | 6.6 b |
| Edison | 6.0 a | 6.3 b | 7.3 a | 7.3 a | 6.8 b |
| Galileo | 5.7 a | 7.3 ab | 7.7 a | 8.3 ab | 7.3 ab |
| Michelangelo | 6.3 a | 7.7 a | 8.0 a | 8.7 a | 7.7 a |
| Newton | 6.0 a | 6.7 ab | 7.3 a | 7.3 b | 6.8 ab |
| Whitney | 5.7 a | 7.3 ab | 7.7 a | 8.3 ab | 7.3 ab |

† Turfgrass color was visually assessed on a 1 to 9 scale where 1=lightest green and 9=darkest green.

* Means in the same column followed by the same letter are not significantly different according to Fisher's protected t-test (P<0.05).