2007 Buffalograss Experimental Line and Cultivar Evaluation

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Objectives:

1. Assess the turfgrass performance of elite buffalograss genotypes across several locations involving a wide range of environmental conditions and possibly make recommendations.

Start Date: 2008
Project Duration: three years
Total Funding: $12,000

Buffalograss [*Buchole dactyloides* (Nutt.) Engelm] is a low-growing, warm-season turfgrass native to the Great Plains of the US. It has an outstanding combination of drought, heat, and cold tolerance and is ideally suited for turfgrass use where low or minimum inputs of water, nutrients, pesticides, and energy are required. Breeding and developing genotypes that meet the future need of the turfgrass industry requires the testing of elite genotypes across a wide range of environmental conditions. For this reason, a trial consisting of 20 turf-type buffalograss genotypes was initiated in 2007.

In 2008, a second trial consisting of nine seeded and seven vegetative genotypes was established at nine locations in eight states. The experimental design was a randomized complete block design with three replications. The plots were 5 ft by 5 ft. Data collected at each location were reported except the two locations in Kansas.

At Mead, NE, data were collected both on 20 genotypes established in 2007 and 17 genotypes re-established in 2008. Significant differences were observed among genotypes tested for establishment rate, seedling vigor, lateral spread, and color in 2007; for turfgrass cover, spring green up, and color in 2008, and turfgrass density and quality in both years.

The 2008 trial also had significant differences among vegetative genotypes for percent cover at 2, 4, and 8 weeks after plantings, density, and quality. Seeded genotypes differed for percent cover two weeks after planting and for summer density. Some new experimental lines were superior to the best commercial cultivar check.

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In Colorado, data were reported only for vegetative genotypes in 2007. Results indicated significant differences among genotypes tested for turfgrass cover at 2, 4, 8, and 12 weeks after planting, as well as turfgrass leaf texture, spring greenup, density, and quality. Two genotypes consistently outperformed the best check at this location.

At Logan, Utah, 2007 data analysis indicated significant differences among genotypes tested for each group for turfgrass cover, quality, color, and leaf texture. The result indicated significant difference among genotypes for turfgrass color and quality. Some experimental lines demonstrated excellent performance.

At Las Cruces, NM, significant differences were observed among genotypes evaluated for turfgrass cover at different times and fall discoloration. Some experimental lines performed similar to or better than the commercially available cultivars.

At Tucson, AZ, significant differences were observed among seeded genotypes tested for turfgrass cover, color, and quality. Vegetative genotypes differed significantly only for percent cover. Two experimental lines performed similar to or better than the best commercially available cultivar.

At Blacksburg, VA, significant differences were found among vegetative genotypes for turfgrass cover, texture, color, and quality, but seeded genotypes differed only in turfgrass cover. Some experimental lines were as good as the best commercially available check.

Summary Points

- Significant differences were observed among genotypes tested for most traits.
- A few genotypes performed similar to or more than the best check in most locations.
- Quality data were slightly low.
- Genotypes performed differently to the range of environments at which they were tested.