

# 2009 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:** 2007

**Project Duration:** three years

**Total Funding:** \$12,000

**B**uffalograss experimental lines and cultivars established in 2007 and 2008 were evaluated for turfgrass performance during the 2009 season at nine locations. Trials were established in Tucson, AZ; Fort Collins, CO; Lawrence and Wichita, KS; Las Cruces, NM; Mead, NE; Logan, UT; Blacksburg, VA; and Yakima, WA. There were 17 entries at each location. ‘Bison’, ‘Bowie’, ‘Cody’, and ‘Texoka’ were used as seeded standards, and ‘Legacy’, ‘Prestige’, and ‘NE 609’ were used as vegetative standards.

There were five seeded and five vegetative experimental lines in addition to the industry standards in the trials. The experimental design was a randomized block with entries replicated three times. Turfs were mowed at 2.0 inches with clippings returned. Two lbs N/1000 ft<sup>2</sup> of was applied as one pound applications in June and July, and irrigation was applied at 50-60% of potential evapotranspiration. Annual grasses and broadleaves were controlled as needed.

Considerable amounts of data were collected for most locations. Seeded and vegetative genotypes were analyzed separately. The seeded experimental lines, NE-BFG-07-02, NE-BFG-07-03 and NE-BFG-07-04E had the best overall turfgrass quality ratings across most environments, indicating their wide adaptation potential. These were followed closely by NE-BFG-07-01 and NE-BFG-07-08. All seeded experimental lines demonstrated superior turfgrass performance over years and locations compared to the industry standards.



Adam Van Dyke evaluates buffalograss selections at Utah State University research plots.

The vegetative experimental lines performed differently than the seeded types. The standard entry, ‘Legacy’, had the best overall performance, but it was followed closely by NE-BFG-07-09 and NE-BFG-07-10, which both showed a wide range of potential adaptation. The other experimental lines showed more specific adaptation.

Four one-acre blocks (i.e. one each of NE-BFG-07-01, NE-BFG-07-02, NE-BFG-07-03, and NE-BFG-07-08) were established in 2008 to evaluate their seed yield potential, using larger scale harvesting equipment. The first harvest was made in August 2009. NE-BFG-07-02 had best seed yield in the first year of harvest for these four experimental lines. In 2010, an additional acre block will be added to evaluate NE-BFG-07-04E.

The turfgrass evaluations and larger seed production trials will be continued through 2010. At the end of this time, decisions will be made on the potential release of these experimental lines. With this in mind, trials were initiated in multiple locations to obtain the necessary data

to support applications for plant variety protection of the seeded types and patenting of the vegetative types. This process was initiated to enhance the potential release process.

## Summary Points

- Significant differences were observed among genotypes tested for most traits.
- Seeded genotypes showed the widest range of adaptation and performance over years and locations.
- Vegetative genotypes were more location specific in their adaptation and performance.
- Large test plots were initiated in 2008 for evaluation of seed yield using large-scale harvesting equipment.
- Large test plots were harvested for the first time in August 2009 with NE-BFG-07-02 having the highest seed yield of the four lines evaluated.
- PVP trials were initiated to collect necessary data to facilitate the release of the seeded types determined to have the best turfgrass performance and adaptation.