Development of Kentucky Bluegrass Cultivars for Non-burn Seed Production


ABPRTF Progress Report
March 30, 2010
Justification

Burning no longer permitted in WA

Shorter rotations (< 3 yrs)

Environmental concerns
  Impact on soil and water quality
  Pesticides

Less economic return
Objective 1

Identify Kentucky bluegrass germplasm that has good turfgrass quality while producing sustained seed yield under non-burn seed production
Germplasm Source

Initially, more than 225 accessions were tested

1994-1995

1996-1999

• 45 accessions evaluated in seed production and turfgrass trials
• 10 selection made for seed yield under bale residue removal and good turfgrass quality
Selection for Seed Yield Components

Selection was for plant with highest:
1) Panicles per area
2) Seeds per panicle
3) Seed weight
4) Seed yield per plant

+ Base population

2002-2004
28 individual plants of each accession replicated 3 times
Seed Increase of 50 Selections at Central Ferry, WA
Objective 2

Evaluate effectiveness of seed yield component selection to enhance non-burn seed production while maintaining turf quality
Seed Production (Irrigated and Non-irrigated)

- 50 entries planted in a randomized complete-block design with 3 replications
- Seed yield
Turfgrass Trial

- 50 entries planted in a randomized complete-block design with 3 replications
- **Quality**, Color, Texture, and Chlorophyll rated monthly

May 2008
Kentucky bluegrass seed yield (2008) vs. turf quality (mean of 2007 and 2008) for entry x selection parameters at Pullman, WA
2009 – 2011 ABPRTF Proposal

- Continue to evaluate seed production under bale management in diverse environments (dryland and irrigated) for 2\textsuperscript{nd} (2009) and 3\textsuperscript{rd} (2010) harvests.

- Continue to test selections for turf quality and stress tolerance at several locations.
  - Pullman – 2006
  - Auburn – 2009
  - Puyallup – 2010
Non-irrigated Kentucky bluegrass seed yield vs. turf quality (rated 1-9; 9=excellent quality) at Pullman, WA, 2009.
Irrigated Kentucky bluegrass seed yield vs. turf quality (rated 1-9; 9=excellent quality) at Pullman, WA, 2009.
Questions