

Turfgrass Breeding

Project: Introgression in *Lolium perenne* and *Festuca* Species

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Objective:

1. To determine the genetic stability of the F₁ hybrids.
2. To evaluate the impact of *F. mairei* genome on turf quality, drought tolerance, and resistance to grey leaf spot disease in ryegrass.

Plant material:

Two accessions of *F. mairei* were collected from Morocco and two accessions of turf type perennial ryegrass were used in the investigations. These were used as male parents in backcross to diploid *L. perenne* to restore a diploid chromosome number of ryegrass. These BC₁ and F₁ are planted at Hancock Turfgrass Research Center, East Lansing, MI.

Interpollinated nursery:

Four hundred plants of nine BC₁ were planted at Hancock Turfgrass Center in August 1999 to permit intermating. The seed was collected in June 2000 for progeny test next growing season.

Backcross nursery:

Twenty plants from each nine BC₁ were removed from the field last January and advanced in the greenhouse. Two hundred plants from each BC₁ were planted Fall 2000 in the nursery to backcross with turf type perennial ryegrass.

Screening for drought tolerance and resistance to grey leaf spot disease have taken place in the greenhouse and growth chamber. Evaluations of the genetic stability of the BC₁, pollen grain viability, and potential seed yield production will be investigated.