

Breeding and Evaluation of Kentucky Bluegrass, Tall Fescue,
Fine Fescues, and Perennial Ryegrass for Golf Turf Use

C. Reed Funk, William K. Dickson, Jennifer M. Johnson-Cicalese,
Ronald Bara, and Dhanonjoy Saha

Soils and Crops Department
New Jersey Agricultural Experiment Station
Rutgers University
October 1985

1. The initial certified seed was harvested from Spartan hard fescue, Victory Chewings fescue, Classic Kentucky bluegrass and Jazz perennial ryegrass. Seed increase fields have been planted to produce future crops of Cimmaron tall fescue, Arid tall fescue, Dawn Kentucky bluegrass, Rebel II tall fescue, and Freedom Kentucky bluegrass. Germplasm obtained from the New Jersey Agricultural Experiment Station was used in the development of these cultivars.
2. Kentucky bluegrasses with improved genetic resistance to billbugs were identified in old, low-maintenance turf trials.
3. Four plants containing non-choke-inducing endophytic fungi were discovered in our germplasm collection of blue sheeps fescue.
4. Breeding programs to incorporate endophytic fungi into leading cultivars and elite populations of hard fescue and Chewings fescue have been initiated.
5. Observations of an old, low maintenance turf trial indicate that billbug resistance in tall fescue can be enhanced by the presence of a fungal endophyte.
6. Turfgrass germplasm was collected from old turfs in New York and New Jersey.
7. Over 4,200 new turf evaluation plots and over seven acres of spaced-plant nurseries were established at the Adelpia research farm. This is part of our program to improve turfgrass performance by increasing stress tolerance, improving pest resistance, and reducing maintenance requirements.

Executive Summary

Continued progress is being made in developing Kentucky bluegrasses, perennial ryegrasses, tall fescues, and fine fescues with better turf performance, increased stress tolerance, and improved resistance to a number of important diseases and insect pests. We are gaining a better understanding of the role of endophytic fungi in enhancing insect resistance and modifying turf performance in perennial ryegrass, tall fescue, Chewings fescue, and hard fescue.