

# Breeding and Evaluation of Kentucky Bluegrass, Tall Fescue, Perennial Ryegrass, and Bentgrass for Turf

**Dr. C. Reed Funk**

**University Rutgers**

## **Goals:**

- Collect and evaluate potentially useful turfgrass germplasm.
- Collect and evaluate endophytes associated with cool-season turfgrass species.
- Continue the breeding and development of new cool-season turfgrasses.

The USGA has enjoyed a very long and productive relationship with Dr. Reed Funk at Rutgers University. Today, the financial contribution of the USGA to his breeding program is small compared to the progress made during the last year. Promising new turfgrass germplasm and associated endophytes were collected from old turfs in Argentina, Oregon, Wyoming, Utah, and New Jersey. Herbarium studies showed that a number of *Poa* and *Festuca* species native to South America contain endophytes. More than 5,000 new turfgrass plots and more than six acres of spaced-plant nurseries were established in 1994.

Germplasm developed at the New Jersey Agricultural Experiment Station contributed to a number of new turfgrass cultivars including PRIZM, ADVANTAGE, and TOPHAT perennial ryegrasses; HOUNDOG V and JAGUAR III tall fescues; WINTERPLAY rough bluegrass; BRIT-TANY Chewings fescue; and PREAKNESS Kentucky bluegrass. Other turfgrasses being evaluated for commercial use include LASER II rough bluegrass, AZURE blue fescue, TREAZURE Chewings fescue, NORDIC hard fescue, and GEN 91 tall fescue.

Considerable winter kill was observed on closely mowed, highly fertilized perennial ryegrasses, tall fescues, and annual bluegrasses, which were covered with ice for nearly three months. Nearby plantings of Kentucky bluegrasses, fine fescues, and bentgrasses showed little or no damage except for some pink and grey snow mold. Adjacent plantings of tall fescues maintained at a higher cut and lower fertility showed little damage from ice sheet cover. Selection of attractive plants surviving prolonged ice cover were made. Turf

trials have been seeded with progenies of the most promising selections. Ice sheet damage on perennial ryegrasses and tall fescues illustrate the need to obtain new sources of germplasm.

Considerable progress continues to be made in developing populations of tall fescues, perennial ryegrasses, Chewings fescues, strong creeping red fescues, and rough bluegrasses with a darker green color, a lower growth profile, more tillers, greater density, and a slower rate of leaf elongation. Many of these characteristics are noted in ecotypes collected from the far northern latitudes. They are also observed when local ecotypes are growing under the short daylengths and cool temperatures of late fall and early winter. Many of these lower growing populations show other short daylength effects such as prolonged winter dormancy. Increased efforts are being made to identify and utilize lower growing plants that are independent of daylength effects.

Kentucky bluegrass cultivars and selections are being screened for resistance to a race of stripe smut that is highly virulent on many widely-used cultivars, including BARON, VICTA, MARQUIS, MERIT, GNOME, KELLY, and VIVA.