

Current and future work is concerned with the following:

1. Characterizing the optimum soil physical environment relative to turfgrass root growth and water absorption.
2. Develop field and laboratory (greenhouse) methods to characterize turfgrass water use (how much required) and primary factors affecting it.

UNIVERSITY OF RHODE ISLAND - Dr. C. Richard Skogley, Project Leader

Funds Granted - \$1,350 — Bentgrass Selection and Breeding and Greens Topdressing Trials.

General support for the bentgrass selection and breeding project is a continuing phase of work under Dr. Skogley. Many selections have proved to be excellent vegetative types but to date none show promise of reproducing sexually, thereby limiting their use.

Topdressing trials were also initiated in 1976 to evaluate various sand, soil and organic ratios. Data must be gathered over several years in such a project for meaningful results.

TEXAS A&M UNIVERSITY - Dr. James B. Beard, Project Leader

Funds Granted - \$4,500 — Investigations Concerning the Causes and Prevention of Turfgrass Wear.

Objectives. To evaluate the comparative wear tolerances of 17 perennial ryegrass cultivars, 8 fine leafed fescue cultivars, and 2 rough bluegrass cultivars plus 13 polystands that have been overseeded onto a dormant bermudagrass putting green turf.

Results. The comparative wear tolerances of 17 perennial ryegrass (*Lolium perenne* L.) cultivars after 500 revolutions of the wear simulator were reported. Most of the improved turf-type cultivars released in the last several years performed quite similarly in terms of wear tolerance, particularly sled wear. Ranking slightly better (from most to least) were Caravelle, Birdie, and Manhattan perennial ryegrasses. In contrast S-321, Syn. D-1, Pelo, and NK-100 ranked low in terms of tolerance to sled wear.

The minimum differentials in wear tolerance among the improved perennial ryegrass cultivars are quite striking, especially in comparison to the results obtained among the 8 fine leafed fescues. Golfrood, Kensington, and Dawson chewings fescue cultivars ranked relatively high in tolerance to sled wear, while

Fortress red fescue, Jamestown chewings fescue, Centurian chewings fescue, Pennlawn red fescue, and Wintergreen chewings fescue exhibited considerably less tolerance to both wheel and sled type wear stresses. These data were collected during an extremely cool, wet winter growing season. Based on these limited observations, it may be possible that certain fine leafed fescues will rank high in wear tolerance during warm, dry winters while the comparative ranking will shift in favor of the perennial ryegrasses during cool, wet winters.

#### RESEARCH IN PROGRESS

1. Correlation of Perennial Ryegrass Leaf Constituents with Turfgrass Wear Tolerance.
2. Nutritional Influences on Turfgrass Wear Tolerance.
3. Cutting Height Influences on Turfgrass Wear Tolerance.
4. Influence of Selected Root Zones on Turfgrass Wear Tolerance.
5. Investigation of Alternate Low Cost Surfaces For Cart Paths.