Supina Bluegrass for Shaded Tee Boxes

Kurt Steinke and John C. Stier
Department of Horticulture

INTRODUCTION

Shaded tee boxes require special attention on a golf course due to the result of a significantly altered microenvironment. Insufficient light energy exists for normal growth and thus it is difficult to maintain a quality type turf. Shaded turf ultimately fails due to disease, competition with tree roots for water and nutrients, or lack of adequate light for photosynthesis. The objective of this study was to 1) to determine the effects of species x nitrogen source under 80% shade, and 2) to determine the effects of species x growth regulator application under 80% shade.

MATERIALS AND METHODS

Establishment: Summer 1999
Design: Split-plot randomized complete block with four replications
Treatments: 0.25 lb. N/M applied granularly every 14 days
0.25 lb. N/M applied foliarly every 14 days
0.125 oz./M of Primo applied every 28 days
0.125 oz./M of Primo applied every 56 days
No Primo
Main Plots: Grass species: supina bluegrass (*Poa supina*), creeping bentgrass (*Agrostis stolonifera*), and Kentucky bluegrass (*P. pratensis*)
Subplots: Nitrogen source and Primo (trinexapac-ethyl)
Maintenance: Mowed three times weekly at 0.5 inches
Irrigation: One time a week at 50% ET

Visual ratings of color, quality, and density were collected bi-weekly during the growing season. A divot tool was used to make divots during each season to evaluate divot recovery. A chlorophyll fluorometer was used to measure the photosynthetic efficiency of each plot. Root mass and depth were measured at both two and four inch depths during the fall season to measure Primo efficacy. A datalogger was placed under the canopy to measure photosynthetically active radiation, temperature, soil temperature, and humidity throughout the growing season. Carbohydrate status and cold tolerance will be monitored during the winter months.

RESULTS AND DISCUSSION

Statistically analyzed data will not be available to Spring 2001, however visual observations were noticeable. Kentucky bluegrass turf density decreased as the summer progressed. Creeping bentgrass did perform quite well but seemed to be more disease prone than supina bluegrass. Supina bluegrass did very well and performed the best under the shaded environment.

Bi-monthly applications of Primo did not have a steady effect over the 56-day period and may in fact harm the grass more than it helps. Turf treated monthly with Primo had better quality, color, and density. Nitrogen source does make a difference and seems to be species specific. Creeping bentgrass seems to benefit more so from a foliar nitrogen application while *Poa* spp. seem to benefit more so from the granular nitrogen application. The foliar-applied bentgrass plots also seemed to suffer less dollar spot damage then the granular-applied bentgrass plots.

Primo appeared to increase root mass of creeping bentgrass more than either *Poa* species. seems to metabolize the Primo better thus giving it a greater root mass. Bi-monthly applications of Primo appeared to decrease root mass. Foliar and granular nitrogen differences are also showing up in root production. Cold tolerance and carbohydrate status of all species involved is currently in progress. The study will be completed by spring 2002.