Benefits Evaluation of *Poa annua* Control in Roundup Ready® Creeping Bentgrass

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Introduction

Roundup Ready® creeping bentgrass (RRCB) was recently developed by The Scotts Company and Monsanto and is expected to be commercially available in late 2004. The greatest advantage of this transgenic grass is that it may finally be possible to eliminate *Poa annua* in golf course putting greens and fairways, a task that has proven to be virtually impossible up until this point. The benefits of RRCB seem to be blatant, but remain unknown. The purpose of this study is to compare and quantify the maintenance inputs, performance and overall turf quality of a monostand of RRCB to mixed stands of RRCB and *Poa annua* maintained at putting green height.

The hypothesis of this study is that the maintenance and performance of a monostand of RRCB is the same as the maintenance and performance of mixed stands of RRCB and *Poa annua*.

Materials and Methods

Experimental Design

In the fall of 2003, a native soil putting green was established at the Iowa State University Turfgrass Research facility consisting of the following treatments:

- 100% RRCB
- 85% RRCB / 15% *Poa annua*
- 50% RRCB / 50% *Poa annua*
- 20% RRCB / 80% *Poa annua*

Each treatment is replicated three times with plots being 10 feet by 14 feet. These plots will be further divided into a control treatment and Primo (*trinexapac-ethyl)* treatment. The area will be maintained at a height of 5/32 of an inch and receive uniform irrigation and fertilizer applications.

Data collection

Overall Turf Quality
Turf quality will be assessed on a weekly basis on a scale of 1-9 with 9 being excellent, 1 being worst, and 6 being lowest acceptable.
Disease incidence
Disease incidence will be recorded upon the presence of the disease. The percentage of the plot affected will be reported as will the pathogen present and the species on which the damage occurred. After documentation, the plot will be treated with an appropriate fungicide to control the pathogen.

Wilt
During July 2004, the area will be monitored for signs of wilt on a daily basis. This will be recorded as a percentage of the plot affected.

Ball Roll
Stimpmeter readings will be conducted once per week. One reading will be made shortly after mowing and another will be taken that same day after 4 p.m.

Maintenance Inputs
At the conclusion of the 2004 season, herbicide and fungicide inputs will be summed up for each plot and presented on a volume basis, and the amount of active ingredient per acre and an estimated dollar amount will be calculated.

Current Status

Data collection will begin in late May to early June of 2004. The study will continue through the summer of 2005 and the results will be presented in the 2005 field day report.