

The Northeast Winter Injury Initiative

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Objectives:

1. Determine best management practices for reducing annual bluegrass turf loss due to winter injury.
2. Examine underlying physiological factors associated with winter injury of annual bluegrass
3. Provide superintendents with updated information and recommendations using the Northeast Winter Injury Initiative website.

Start Date: 2007

Project Duration: two years

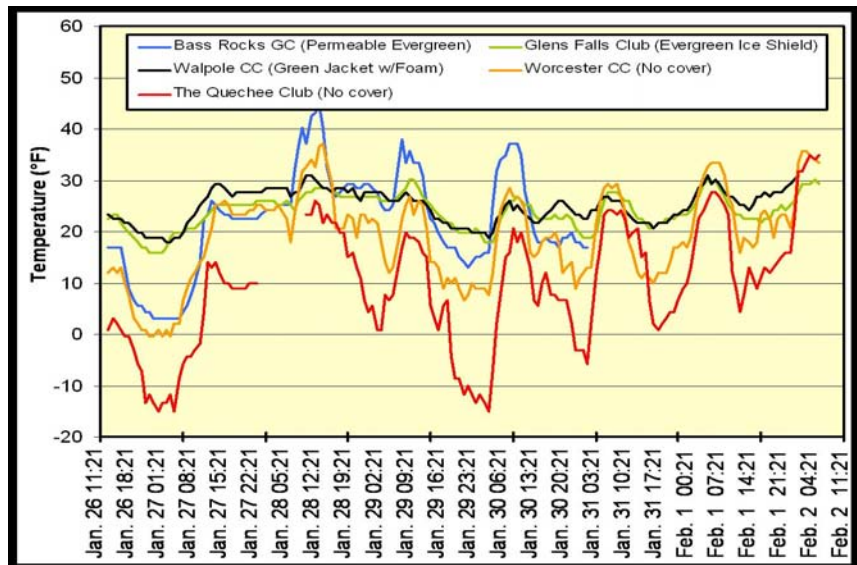
Total Funding: \$6,000

Winter damage to annual bluegrass (*Poa annua*) putting greens is a major concern for golf course superintendents in the northeastern United States. Greens and fairways comprised of considerable populations of annual bluegrass may experience as much as 70-90% turf loss from winter damage.

The problems associated with winter injury of turf are complex, and can result from several interacting factors including low temperature kill, crown hydration, desiccation, and low-temperature fungi. Among these factors, previous research has shown that annual bluegrass is particularly sensitive to direct low temperature kill and crown hydration. However, the physiological basis for these various sensitivities still requires further investigation.



Annual bluegrass is particularly sensitive to direct low temperature kill and crown hydration.



Turf canopy temperatures of annual bluegrass putting greens at five golf courses in the Northeast (January 26 to February 2, 2007), illustrating the moderating effect that some covers appear to have on canopy temperature fluctuations.

The long-term focus of this project is to assess underlying factors that contribute to variability in annual bluegrass winter survival, and to identify practices and conditions that result in minimum winter damage to annual bluegrass-creeping bentgrass greens. This will be accomplished through collaboration between University of Massachusetts researchers, the USGA, and proactive golf course superintendents in the Northeast region. Information gained from this project will be valuable for providing better management recommendations for golf course superintendents that consistently experience winter injury on annual bluegrass turf.

Annual bluegrass plots were established at the Joseph Troll Turf Research Center for evaluation of fall management practices and their influence on the cold acclimation process for annual bluegrass. This will initially include evaluation of mowing practices, and eventually expand to examine additional management factors, including irrigation practices and application of plant growth regulators.

In addition, golf course superin-

tendents have volunteered to participate as field cooperators. Problem greens on golf courses have been identified and are presently being monitored for changes in temperatures and cold hardiness over winter months. These factors will be monitored on golf greens with and without various types of green covers.

All information gathered from researchers and superintendents is posted on the University of Massachusetts Northeast Winter Injury Initiative website, which is continuously updated and available to the superintendent community.

Summary Points

- Research is underway to identify practices and conditions that can minimize annual bluegrass turf loss due to winter injury.
- Data obtained from university research and golf courses in the Northeast region is regularly updated on a website (www.umassturf.org/winterinjury), which is essential for disseminating important winter injury information to the superintendent community.