Grow-in and Cultural Practice Inputs on USGA Putting Greens and Their Microbial Communities

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Goals:

- *Evaluate grow-in procedure effects on putting green establishment and performance, and develop criteria and recommedations for new putting green readiness for play.*
- *Determine grow-in procedure impacts on root zone physical and chemical properties.*
- *Evaluate post grow-in cultural practice effects on putting green long-term performance.*
- *Determine temporal and spatial (by depth) patterns of rhizosphere community development in golf greens during accelerated and controlled grow-in of select root zone mixes and during long-term green maintenance.*

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The overall goal of this project is to develop a better understanding of the impact of grow-in procedures on putting green establishment and performance. Impacts on the physical, chemical, and microbiological factors associated with the USGA root zones and rhizosphere are emphasized in the project.

The five year project is composed of three phases, One: Construction and Grow-in, Two: Microbial Community Assessments, and Three: Grow-in Procedure Impacts on the Long-term performance of the Putting Green. Phases One and Two span three year periods, while Phase Three will involve experiments repeated over the five years of the project.

Two separate USGA-specification root zone mixtures - one composed of sand and peat (80/20 ratio) and one a combination of sand, soil, and peat (80/5/15 ratio) - were developed in 1996. Materials used for construction complied with USGA Greens recommendations for physical characteristics and organic matter content. Greens were constructed in late summer of 1996, allowed to settle over the winter, and were seeded with Providence creeping bentgrass (1.5 lbs/1000 ft^2) in the spring (May 30) of 1997.

Preliminary results from 1997 indicate the following:

Higher inputs will initially increase cover during grow-in. This increase may not translate to earlier opening for play if environmental

stress conditions occur that result in damage to lush, immature turf.

A root zone mix containing soil will establish quicker and recover from environmental stress faster than a soil-less mix. A soil-containing mix also will be harder and may result in longer ball roll distance.

Addition of soil to the root zone mix will not effect water infiltration during the establishment year.

Results of microbial assessments are pending.