Nitrogen Rate Effects on Root Morphology of Creeping Bentgrass and Annual Bluegrass During Summer Decline and Fall Recovery. (C05-lyons155923-Oral)

Authors:

- E.M.Lyons* - *Penn State University*
- D.P.Knievel - *Penn State University*
- D.R.Huff - *Penn State University*

Abstract:
The root morphology of turfgrasses is an important factor in turf quality. Nitrogen fertility affects the root morphology of closely mowed turfgrasses. We investigated the effects of a high and low nitrogen rates on the seasonal root morphology and tiller densities of creeping bentgrass and annual bluegrass under low mowing heights. Two nitrogen rates were applied to Penncross, Penn A-4, and three genotypes of annual bluegrass in the field, maintained at 3mm height. We measured tiller densities, root mass, and root length density at three depths from early summer through the fall. Both creeping bentgrass and annual bluegrass showed reductions in root mass over the summer months. During the early summer and fall, high nitrogen rates appeared to reduce creeping bentgrass root mass, but the affects were not present during summer root decline. Nitrogen rates had little effect on annual bluegrass root growth. While both species exhibited increased tiller densities with high nitrogen rates, creeping bentgrass also showed a change in root morphology that was not apparent in annual bluegrass.

Corresponding Author Information:

Eric Lyons
Penn State University
116 ASI
University Park, PA 16802

phone: 814-863-7608
fax: 814-863-7043
e-mail: eml154@psu.edu

Presentation Information:
Presentation Date: Monday, November 11, 2002
Presentation Time: 8:45 am

Keywords:
Annual Bluegrass, Creeping Bentgrass, Roots, Nitrogen