Effect of ozonated and oxygenated water on turf growth and root zone chemistry. (S02-sloan090738-Poster)

Authors:

- J.J.Sloan - *Texas Agricultural Experiment Station*
- M.C.Engelke - *Texas Agricultural Experiment Station*
- L.E.McLarry - *Texas Agricultural Experiment Station*

Abstract:

During the hot days of summer, grasses can suffer from lack of oxygen in the rooting zone. The objective of this study was to evaluate the effect of water ozonation and oxygenation on turf growth and root zone chemistry. Bentgrass cores were collected from a sand-based bentgrass nursery and placed in PVC columns designed to collect leachate water. Cores were placed in a greenhouse and irrigated with 1) tap water, 2) aerated water (12 mg/L dissolved oxygen (DO)), or 3) ozonated water (aerated plus 0.5 mg/L ozone). Leachate was periodically collected and analyzed for pH, EC, DOC and nutrients. Grass clippings were weighed and analyzed for total N and P. Roots were periodically collected from selected cores to determine root distribution. After 2 to 3 months treatment, grass clipping weights were significantly greater for the cores irrigated with ozonated water, and to a lesser extent, aerated water. Early leachate samples showed no effect due to water treatments, but as average daily temperatures increased, we observed elevated NO3-N and EC levels in leachate from aerated and ozonated samples, suggesting increased mineralization of organic matter in those bentgrass cores.

Corresponding Author Information:

John Sloan
Texas Agricultural Experiment Station
17360 Coit Road
Dallas, TX 75252

phone: 972-952-9260
fax: 972-952-9216
e-mail: j-sloan@tamu.edu

Presentation Information:

Presentation Date: Tuesday, November 12, 2002
Presentation Time: 2:00-4:00 pm
Poster Board Number: 2236

Keywords:

Ozoned water, irrigation, sand-based growing medium, leachate