The experiment is being performed in a climate-controlled greenhouse at the G.C.Horn turf field laboratory at the University of Florida in Gainesville. Floratam St.Augustinegrass is being compared with a mix of ornamentals including canna, nandina, ligustrum and allamanda. Plant material is growing in 80-gallon plastic pots in an Arredondo fine sand. There are three fertilizer treatments (16-4-8 quick-release, 15-0-15 quick-release, 8-4-12 slow-release) applied at 1.0 lb. N/1000 sq. ft. every other month. There are four replications.

Leachate is collected at three intervals following treatment and analyzed for nitrate and phosphate content. Quality ratings are taken weekly and multispectral reflectance readings are taken biweekly. Water is applied to meet the evapotranspiration. Turfgrass tubs are mowed biweekly by hand.

In this preliminary work, turf was more responsive than ornamentals to fertilizers and preliminary data indicate best turfgrass response from quick release 16-4-8 and 15-0-15 treatments. During the establishment period, water use was lower in turf than ornamentals.

Fertilization of St. Augustinegrass And Environmental Implications

Dara M. Park, John L. Cisar, George H. Snyder and Karen E. Williams

A multi-faceted field-scale study evaluating the effect of turfgrass nitrogen fertilization and irrigation maintenance practices on turfgrass performance and N leaching from St. Augustinegrass lawns was conducted over six bimonthly cycles. Water samples were collected and analyzed for NO3-N and NH4-N. Other data collected included clipping yields and turfgrass visual quality ratings throughout the year.

As expected, excessive N fertilization at approximately double standard recommendations resulted in significantly more N leaching. Conversely, reducing the N rate by half of the recommended rate did not significantly reduce N leaching but did lower turf quality ratings to levels below minimally acceptable values as the experiment progressed for sod grown with lower soil organic matter.

Homeowners should be encouraged to apply the appropriate amount of fertilizer N, since excess N results in adverse environmental impact. Too little N could result in the eventual overuse of fertilizer and pesticides to improve the quality stand of turf and/or result in the replanting of turf sod which also has environmental consequence.

The rate of irrigation played a role in reducing N leaching during several dry season cycles. During rainy weather, reduced scheduled irrigation was not effective in reducing N leaching. Slow-release N sources did not consistently reduce N leaching. This experiment compared readily soluble N from urea versus N from urea encapsulated with a sulfur/polymer barrier as a means to provide controlled N release. Further research on the influence of other N sources to reduce N leaching is suggested to gage the effectiveness of other products to reduce N leaching.

The level of soil organic matter (SOM) in sod had significant impacts on N leaching. Higher SOM resulted in higher N concentrations in percolate before the initiation of N fertilization and in more N leaching after N fertilizer applications were made. However, higher SOM improved turf quality and clipping growth. Based on this research, N fertilization strategies could be optimized to provide quality turf with reduced potential N leaching by accounting for N contributions from SOM during the first year after planting. The influence of SOM over time needs further study to quantify the extent of N release over several years.

Evaluating Methods of Predicting Irrigation Needs of Warm-season Turfgrasses

Joon H. Lee and Laurie E. Trenholm

Water is one of the greatest limiting factors influencing turfgrass growth. Due to increased pressure to preserve water resources, there is interest in development of sensor-based technologies to indicate turfgrass irrigation requirements. This study is designed to determine what technologies might reliably and accurately predict