

**DETERMINING IRRIGATION AND NUTRIENT RECOMMENDATIONS FOR THREE TURFGRASS SPECIES**

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**Abstract**

Turfgrass requires irrigation and fertilizer applications, and is often perceived to be a source of nitrogen (N) leaching, especially on coarse textured soils. Water requirements for turfgrass have been based on water use rates, frequency and quantity. Managing N leaching is difficult because N losses are often intermittent and depend on precipitation and soil texture. Research was conducted in 2005 and 2006 to determine recommendations for irrigation and nitrogen programs, and monitor soil and tissue nutrient levels to determine the impact of the programs. The irrigation treatments were no irrigation, 0.25 cm of water every two days, and 1.78 cm of water once per week were applied. The N treatments were 98, 156, and 208 kg·ha<sup>-1</sup>·yr<sup>-1</sup>. The low, medium, and high N treatments were applied over 2, 4, and 6 applications, respectively. Nitrogen was applied using a formulation containing 25% of slow and 75% of fast release nitrogen sources that are representative of typical home lawn fertilizers. Muriate of potash (0-0-60) was used as a source of potassium (K) and applied at a 2:1 N to K. No phosphorus (P) was applied as a soil test indicated a high soil P level. Three species that are Kentucky bluegrass, Tall fescue, and the mixture of Kentucky bluegrass, perennial ryegrass, and creeping red fescue were used. Turfgrass color and quality ratings were taken every two weeks. Turfgrass clippings were collected every month and weighed. Soil tests were taken monthly and analyzed for N, P and K levels. Soil volumetric water content (%) was measured at 12 cm depth every two weeks. There were significant irrigation and species main effects from 8 to 16 WAT (weeks after treatment). The highest volumetric water content was measured for the every other day irrigation treatment for tall fescue from 8 to 16 WAT.