

## **Effect of Irrigation and Ammonium Sulfate Fertilizer on Phosphorus Transport through Runoff and Deep Percolation from Grassed Plots**

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**Abstract.** The goal of this research was to estimate the nutrient loads associated with both subsurface leaching and surface runoff from irrigated turf grass. Research presently available concludes that phosphorous export from turf grass is negligible. Data collected from this study contradicted this conclusion and suggested that phosphorus export was dependent on both the irrigation rate and the application of ammonium sulfate fertilizer.

Drainage lysimeters were used to study deep percolation of phosphorus while phosphorus loads in surface runoff was estimated using 1 m by 2 m sodded soil boxes. Both portions of the study revealed a strong correlation between nitrogen fertilizer application (ammonium sulfate) and phosphorus mobility. Upon application of the recommended rate of ammonium sulfate, dissolved phosphorus concentrations increased from an average 1.2 mg PO<sub>4</sub>/L to 2.0 mg PO<sub>4</sub>/L in the lysimeter studies and from 1.6 mg PO<sub>4</sub>/L to over 30 mg PO<sub>4</sub>/L in surface runoff. Surface runoff phosphorus concentrations declined with subsequent irrigations. Application of phosphorus fertilizer (superphosphate) showed little effect on phosphorus export.

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