Environmental Science Graduate Program Seminar Series

Effect of alfalfa (*Medicago Sativa L.*) on subsurface (tile) nitrogen and phosphorus loss in Ohio, USA

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Smith Laboratory, Room 3150

Abstract

Annual row crops dominate agricultural land use in the Midwestern USA. This reduced crop diversity has resulted in major nitrogen (N) and phosphorus (P) losses to waterbodies, causing significant health, economic, and environmental issues. Perennial crops are expected to reduce nutrient losses to waterbodies compared to annual row crops. However, more comprehensive data are needed on the nutrient loss effect of introducing perennial crops into row crop agriculture. This study examines the effect of perennial crops on N and P losses in subsurface drainage, which is the primary pathway for nutrient transport in the Midwestern USA. Our findings suggest that introducing alfalfa into row crop rotations could improve water quality in waterbodies by reducing nutrient losses and increasing the resiliency of agricultural systems.

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