Bromide Leaching under Chisel-till and No-till Measured by Lysimeters. (S11-zhu142451-Poster)

Authors:

- Y.Zhu* - *Penn State University*
- R.H.Fox - *Penn State University*

Abstract:

Bromide (Br) was used as a tracer to study nitrate (NO3) leaching under till and no-till and to evaluate the leachate collection efficiencies (LCE) of zero-tension pan and capillary fiberglass wick lysimeters. The experiment was conducted in a Hagerstown silt loam and had five N rates (0 to 200 kg/ha in 50 kg increments), two tillage treatments (chisel till and no-till), and three replications. Nitrogen rate had no significant effect on annual and 4-yr total flow-weighted Br concentrations and masses in leachate collected by either pan or wick lysimeters. Four-year cumulative Br mass collected by both pan and wick lysimeters from till and no-till treatments were not significantly different, indicating that tillage has no significant effect on NO3 leaching. Less than 5% of the total Br collected during the 4-yr experiment period was collected during the 1st yr growing season (GS). More than 70% of the total Br was collected during the 1st yr nongrowing season (NGS), indicating that NO3 leaching is minimal in the GS and most NO3 leaching occurs in the NGS. LCEs estimated by water balance and Br recovery mass balance methods were correlated, but were not identical.

Corresponding Author Information:

Yuanhong Zhu
Penn State University
Dept. Crop and Soil Sciences
University Park, PA 16802

phone: 814-865-9021
fax: 814-863-7043
e-mail: yxz117@psu.edu

Presentation Information:

Presentation Date: Wednesday, November 13, 2002
Presentation Time: 9:00-11:00 am
Poster Board Number: 1635

Keywords:
chisel-till, no-till, bromide leaching, lysimeters