Sorption of Sulfonamide Antibiotics to Clay Minerals. (S09-pedersen105210-Oral)

Authors:

- J.A.Pedersen* - *University of Wisconsin - Madison*

Abstract:

Sulfonamide antibiotics represent a large class of synthetic, primarily bacteriostatic agents finding both human and veterinary use. These compounds enter soil and subsurface environments through the disposal and use of human and animal wastes. Interaction of sulfonamide antibiotics with particle surfaces controls their leaching, subsurface transport, susceptibility to degradation and promotion of antibiotic resistance. Sorption of sulfonamide antibiotics to soils is greater than would be expected from compound hydrophobicity suggesting that mechanisms in addition to hydrophobic partitioning to natural organic matter play a significant role in their association with soil particles. Specific interactions with clay mineral surfaces may contribute to the greater than expected sorption of these compounds. To investigate this possibility, we examined the association of selected sulfonamide antibiotics with whole soils and reference clay minerals.

Corresponding Author Information:

Joel Pedersen
University of Wisconsin - Madison
1525 Observatory Drive
Madison, CA 53706-1299

phone: 608/263-4971
fax: 608/265-2595
e-mail: joelpedersen@facstaff.wisc.edu

Presentation Information:

Presentation Date: Wednesday, November 13, 2002
Presentation Time: 9:20 am

Keywords:

antibiotic, sorption, clay, adsorption