Importance of manure properties for the vadose zone transport and survival of manure bacteria. (S03-unc110825-Oral)

Authors:

- A.Unc - *University of Guelph*
- M.J.Goss - *University of Guelph*

Abstract:
A number of complex phenomena affect the ability of pathogens from manure to survive and be transported in the soil. The physical configuration of soil, the soil chemistry, and the properties of bacterial cells are of importance in the retention of bacteria in soils. Transport of bacteria in soils obeys the general laws pertinent to the interaction between particles and surfaces of variable charge, and those of water flow, but movement is confined to macropores. Detailed characterization of the variable properties within the structured soil profile is a difficult task. Application of manure results in potentially significant changes in the physical and electrochemical properties of the soils. Such changes can affect the interaction between bacterial cells and soils. Survival of faecal bacteria is affected by the physical and chemical conditions existing prior to manure application as well as by conditions imposed by mixing soil and manure. We speculate on how the properties of such a complex environment as the soil-manure medium can be manipulated to control the transport of bacteria within the vadose zone.

Corresponding Author Information:

Adrian Unc
University of Guelph
University of Guelph, Land Resource Science
Guelph, ON N1G 2W1
Canada

phone: (519) 824-4120 ext. 4262
fax: (519) 824-5730
e-mail: aunc@lrs.uoguelph.ca

Presentation Information:

Presentation Date: Monday, November 11, 2002
Presentation Time: 8:45 am

Keywords:

manure, bacteria, contamination, transport