Fate of Tylosin in Aqueous Manure-Soil Systems. (S11-oliveira193051-Poster)

Authors:

- M.F.Oliveira Purdue University
- A.K.Sarmah Purdue University/Landcare Research NZ Ltd.
- L.S.Lee Purdue University
- P.S.C.Rao Purdue University

Abstract:

Over 22 million pounds of antibiotics produced annually in the United States are used routinely in livestock operations at therapeutic levels to treat disease, increase feed efficiency, and improve growth rate. With increases in the intensive use of antibiotics in concentrated animal feeding operations and land application of manure, there is concern that excreted pharmaceuticals will migrate in the environment with potential impacts on water supplies and the production of antibiotic-resistant microbial populations. The antibiotic Tylosin, a mixture of macrolides consisting of primarily Tylosin A but with small amounts of Tylosin B, C and D, is an antibiotic widely used in the swine industry. Tylosin sorption and transformation in several soils was measured, and degradation of tylosin in a simulated swine manure pit was assessed over time. Tylosin sorption was nonlinear and was best correlated to soil pH and cation exchange capacity. Transformation rates and metabolites varied with soil type. In fresh urine, Tylosin B and D dominated whereas Tylosin A was the primary peak in fresh manure. Changes in Tylosin metabolites over time in the manure systems will be presented.

Corresponding Author Information:

Maurilio Oliveira Purdue University Purdue University; Department of Agronomy West Lafayette, IN 47907-1150 phone: 765-4962821 fax: 765-4962926 e-mail: moliveira@purdue.edu

Presentation Information:

Presentation Date: Wednesday, November 13, 2002 Presentation Time: 2:00-4:00 pm Poster Board Number: 1341

Keywords:

swine manure, antibotics, MALDI analysis, DOC