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# Life Cycle Assessment of Tylosin and Chlortetracycline Antimicrobial Use at Swine Production Facilities

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Rocky Mountain - 62nd Annual Meeting (21-23 April 2010)

## Paper No. 15-11

Presentation Time: 11:40 AM-12:00 PM

# LIFE CYCLE ASSESSMENT OF TYLOSIN AND CHLORTETRACYCLINE ANTIMICROBIAL USE AT SWINE PRODUCTION FACILITIES

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This study investigates the environmental effects associated with tylosin and chlortetracycline (CTC) antimicrobial sub-therapeutic use within upper Midwestern US swine production facilities following life cycle assessment (LCA) methodology. Environmental LCA-associated impacts were modeled using SimaPro and assessed using EcolIndicator 99 for antimicrobial manufacturing, feed blending and transport, metabolic and manure emissions, and facility operations for starter, grower, and finishing swine operations. LCA results suggest current high energy demands associated with manufacturing processes and large transport distances to producers of CTC and tylosin increased disability adjusted life year (DALY) climate change impacts compared to no antimicrobial use. Feeding CTC resulted in several local positive changes including increased feed utilization and reduced manure greenhouse gas emissions. However, these positive changes in the local environment did not offset negative global impacts associated with material manufacturing and transport. Using renewable energy sources for production and transport would result in net environmental enhancement.

[Rocky Mountain - 62nd Annual Meeting \(21-23 April 2010\)](#)

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