ses
school of environmental sciences

The Research Seminar Presentation by

Jemaneh Habtewold

will be held on

Tuesday November 03, 2015

At 11:35 am

ALEXANDER HALL 337

Title: Mitigation strategies for methane emissions from stored dairy manure slurries: Effects on methanogens and methanotrophs

Abstract

The mounting demand for dairy-based foods is intensifying dairy farming, which produces large volumes of manure wastes. Due to the ease of handling, liquid manure management is preferred by many dairy farmers. However, liquid management of manures creates environment conducive to the production of methane. Reductions of slurry total solid (TS), residual inoculum (RI), pH, and urine contamination (UC) have often been reported as potential mitigation strategies for methane emissions from these sources. Efficiencies of the strategies are dependent on changes that they may cause on methanogenic and/or methanotrophic communities. However, studies dealing with this scenario from stored manure slurries are limited. Thus, this study aims to explore changes in abundance, diversity and activity of methanogens and methanotrophs from stored dairy manure slurries subjected to varying levels of TS, RI, pH, and UC. Investigations will be conducted at a pilot-scale manure storage research facility. Fresh dairy manures will be treated independently for each experiment for at least 3 months, during which slurry physicochemical parameters and methane flux density will be measured. After collecting slurry samples at the beginning, middle and end of storage periods; abundance, diversity and, activity of methanogens and methanotrophs will be studied by targeting the respective *mcrA* and *pmoA* genes. In addition to providing inputs for improving efficiencies of the strategies, results from this research will provide insights into further research in the field.

Everyone is welcome to attend

(This is a Research Proposal presentation by students in ENVS*6900)