

Soil and Water Science Distinguished Speaker Seminar

Speaker: Dr. Sally Brown

School of Environment and Forest Science
College of the Environment
University of Washington
<http://faculty.washington.edu/slb/>



**Title: Toilet to Tank – Impact of Recycling
Nutrients for Switchgrass-Based Ethanol**

Date: Monday, January 25th

Time: 3:00 pm – 4:00 pm

Location: McCarty Hall D, Room G001

Energy costs can often eliminate benefits associated with biofuel production and use. A significant portion of these costs stems from fertilizing the crops that generate the feedstocks for the biofuels. Energy required to produce fertilizers and fugitive greenhouse gas emissions when these same fertilizers are added to soils are the primary costs of synthetic fertilizers. Switchgrass based ethanol has been touted as the green alternative to ethanol produced from corn grain. This research was done to see if alternatives to synthetic fertilizers could make this fuel even greener. Combined croppings of switchgrass and alfalfa and switchgrass fertilized with municipal biosolids were compared to conventionally grown grass. Fertilizer-based emissions, total yields and total ethanol potentials (TEP) of the harvested biomasses were measured. Alfalfa switchgrass mixed fields had reduced N₂O emissions but also reduced biomass and reduced TEP compared with fertilizer treated grass. Biosolids fertilized grass had somewhat higher N₂O emissions, equivalent yields and equivalent TEP to fertilized grass. However, fertilizer avoidance credits made biosolids much less greenhouse gas intensive. There are significant benefits from using recycled nutrients for bioenergy production. Toilet to tank has the potential to make a truly green alternative to fossil-based liquid fuels.

The link to the live video streaming and recording is available by clicking here: [Streaming Link & Recording](#). For additional details about Dr. Brown's visit, please contact Dr. George O'Connor (gao@ufl.edu).