An Earth Sciences Perspective of Soils

46th Annual Alberta Soil Science Workshop

February 17 - 19, 2009
Mayfield Inn and Suites
16615 - 109th Avenue
Edmonton, AB T5P 4K8

Alberta Soil Science Workshop

2nd Call for Papers and Posters

Plenary Speakers

Sue Brantley, Ph.D.

Director, Earth and Environmental Systems Institute. The Pennsylvania State University.

Research Interests: Chemical and physical processes associated with the circulation of aqueous fluids in shallow hydrogeologic settings., the measurement and prediction of the rates of natural processes including chemical weathering and natural degassing, and the effect of microbial life on mineral reactivity. www.essc.psu.edu/~brantley/index.html

J. Patrick Megonigal, Ph.D.

Senior Scientist, Smithsonian Environmental Research Center; Principal Investigator of the Biogeochemistry Laboratory

He is the curator of *Dig It! The Secrets of Soil* in the Smithsonian's National Museum of Natural History, Past-Chair of the Wetlands Soils Division of the Soil Science Society of America, and Past President of the Society of Wetland Scientists. Research Interests: Soil carbon cycling, microbial ecology, global change and wetland ecosystems. www.serc.si.edu/labs/biogeochem/index.jsp

C.A. Scott Smith

Manager, Soil Data Section of NLWIS (AAFC)

Research Interests: Soil genesis with specific interests in permafrost-affected soils, climate change impacts and land suitability modelling, water supply and demand in semi-arid environments. www4.agr.gc.ca/AAFC-AAC/display-afficher.do?id=1181922330553&lang=e

Joselito M. Arocena, Ph.D.

Canada Research Chair in Soil and Environmental Sciences;
Professor of Environmental Science and Engineering (UNBC)

Research Interests: Soil micromorphology, mineralogy, chemistry and their applications to soil genesis, nutrient cycling in forestry and agriculture, ecology, environmental remediation, air and sediment quality, geomorphology, outdoor recreation and archaeology. www/unbc.ca~arocenaj/index.php

Papers

Selected papers will be presented in the Volunteer Sessions on the afternoon of Wednesday, February 18, 2009 and the morning of Thursday February 19, 2009. Speakers will be allotted approximately 20 minutes for their presentation (including questions)

Posters

The Volunteer Poster Session will be held during the evening Wine and Cheese reception on Tuesday February 17, 2009. Posters may be left in place until the afternoon of Thursday February 19, 2009.

Student Competition

There will be First ($300) and Second ($150) place awards for the best student oral presentations at the 2009 Workshop. Please indicate on your abstract if you wish to have your presentation included in the Student Competition. Five travel bursaries are available ($100 each) to assist students in attending the Workshop. Applications for travel bursaries are available from Len Kryzanowski (len.kryzanowski@gov.ab.ca).

Abstracts

If you wish to give an oral or poster presentation at the Workshop, please submit an abstract (200 words maximum, electronic format) and indicate whether you prefer an oral or poster presentation, by Friday December 12, 2008 to:

Dr. Scott Chang
Faculty of Agricultural, Life and Environmental Sciences
442 Earth Sciences Building, University of Alberta, Edmonton, Alberta T6G 2E3
Tel: (780) 492-6375 Fax: (780) 492-1767 Email: scott.chang@ualberta.ca
http://www.soilsworkshop.ab.ca/

* The Workshop Organizing Committee reserves the right to select abstracts from those submitted. A policy of one presentation per author is maintained. Additional presentations by an author will be considered only if space is available.

Please circulate this notice to all potentially interested parties.

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Sample Abstract

***EFFECT OF GRANULAR UREA PLACEMENT ON NITROUS OXIDE PRODUCTION FROM A SILT LOAM SOIL**

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D. Liang,
College of Resources and Environment, Northwest A & F University, Shaanxi, Yangling, China, 712100

A. Bembenek and R. Wallander
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ABSTRACT

Urea (46-0-0) placement in band or nests has been shown to enhance nitrogen use efficiency, but limited work has been done to assess its effect on N2O production. This study compared N2O production from urea prills applied to a silt loam soil using different placements. Experiment I was conducted (48 d) in greenhouse pots (6.3 kg soil). Urea (0.59 g N) was applied as broadcast surface (bcs), broadcast incorporated (bci), band, and nest placements. Experiment II was conducted (201 d) in the field and included urea bcs, band, and nest placements at 100 and 200 kg N ha-1. In Experiment I, bci and bcs emissions rose to a peak and returned to background levels in advance of band and nest placements. Nitrous oxide production was prolonged for the band, and in particular the nest placement. The fraction of urea loss as N2O was estimated to be 0.11%, 0.14%, 0.20%, and 0.26% for the bci, bcs, band, and nest placements, respectively. Experiment II results were generally consistent with Experiment I, though emissions were quite variable and impacted by summer drought. Nest emissions lagged behind bcs and band applications as result of inhibition of urea hydrolysis and nitrification, particularly at the high N rate. Nitrous oxide losses were estimated to be 0.16, 0.66, and 0.60% of applied N for bcs, band, and nest placements, respectively. Cumulative N2O emissions and fertilizer loss coefficients appear to be enhanced by placement of urea prills in small, concentrated zones.

Abstract Format: Title/Contact Information - 14 pt; Abstract body - 12 pt
Please indicate your preference for an oral or poster presentation