

# THE SOILED PROFILE



## NEWSLETTER DEPARTMENT OF SOIL SCIENCE UNIVERSITY OF MANITOBA “bringing you the latest dirt”



UNIVERSITY  
OF MANITOBA

For general inquiries or if you have material to include in the newsletter:

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Past issues of the Soiled Profile are on our  
webpage: [umanitoba.ca/afs/soil science/](http://umanitoba.ca/afs/soil%20science/)

**15 December 2017**

### Upcoming:

Wednesday, Dec 20, 12:00 noon, Room 346 Ellis Building – Department of Soil Science annual holiday potluck.

The food that is on the signup sheet in the main office sounds delicious! If you haven't already done so, sign up and bring your favourite dish. It will be another great holiday celebration.

Dec 22 to Jan 1 – Winter holiday. University closed.

### Department Staff Away:

David Lobb

Sabbatical July 01 – December 31, 2017

Mario Tenuta

Sabbatical July 01 – December 31, 2017

### News:

#### Farewell Carmela

Sadly, we must bid farewell to Carmela. She has accepted a position in an accreditation role at the Bannatyne campus. It is an excellent opportunity for her and we wish her well. She will be starting her new position in January, so her last day here is December 21. We are going to miss you and your friendly smile in the department. Please come and visit us.

#### Graduate Student Orientation Session

7:30 am - 11:00 am, Friday, January 5, E2-229, EITC (Light breakfast provided).

Are you a graduate student in the Faculty of Agricultural and Food Sciences? Do you have questions about the services and resources available to you? Want to learn more about research protocols? Would you like to get to know your fellow graduate students, departmental program chairs, and program assistants?

A morning session that will feature speakers from Student Advocacy and Accessibility, Student Support Services, and Office of Research Ethics and Compliance. The morning will conclude with a team-building activity. See morning agenda [here](#).

Event is free but registration is required by **January 3** to [agfoodsci@umanitoba.ca](mailto:agfoodsci@umanitoba.ca).

### Important Changes to Concur Expense Claims Effective Immediately

Highlights: [click here](#). The revised Procedure can be found [here](#).

### *Paper of the week:*

**Farenhorst, A., Amarakoon, I, Andronak, L.A.** 2017. 17 beta-Estradiol mineralization under field and laboratory incubations. J. Environ. Sci. Health Part B-Pesticides Food Contaminants and Agricultural Wastes 52: 564-569

## **Opportunities:**

### **2018 NSERC-Undergraduate Student Research Awards**

The application form for the Summer 2018 NSERC-USRA competition has now been posted on the Faculty of Agricultural and Food Sciences awards webpage: <http://umanitoba.ca/afs/awards/>. Deadline for interested students to submit applications is Wednesday, **January 17, 2018**. All applications should be e-mailed to [agawards@umanitoba.ca](mailto:agawards@umanitoba.ca). For a complete listing of NSERC USRA eligibility criteria, please see: [http://www.nserc-crsng.gc.ca/Students-Etudiants/UG-PC/USRA-BRPC\\_eng.asp](http://www.nserc-crsng.gc.ca/Students-Etudiants/UG-PC/USRA-BRPC_eng.asp).

Successful candidates will be notified once the Awards Committee has selected winners, at which point instructions for completing the online USRA application form will be provided. The value of each award is \$4,500 plus the Faculty/Department's contribution for 16 weeks of full time research completed May to August.

For questions: Marisol Soto, Student Awards Coordinator, Faculty of Agricultural and Food Sciences, T: 204.474-1688, [Marisol.Soto@umanitoba.ca](mailto:Marisol.Soto@umanitoba.ca).

### **2018 University of Manitoba Undergraduate Research Award**

This award experience allows students to be mentored full-time with a professor of their choice for 16 weeks, to receive a \$7,000.00 award, and to gain valuable experience in their field of interest. This year the university will offer 172 awards and have dedicated up to ten awards to Indigenous students and up to two awards for community-based research projects.

Application deadline: **January 26, 2018**. Application form: [https://umanitoba.ca/research/experience\\_research/media/URA\\_Application\\_Form.pdf](https://umanitoba.ca/research/experience_research/media/URA_Application_Form.pdf).

### **Two M.Sc. Positions, Department of Biology, University of British Columbia - Okanagan**

Project title: Understanding the impact of irrigation on soil carbon storage and associated greenhouse gas emissions at a regional scale. Supervisor: Dr. Melanie Jones

Two enthusiastic MSc students are sought to join an inter-disciplinary research team. Both students will assist in the collection and analysis of soil samples from non-cultivated sites and from irrigated fields, orchards and vineyards located along length of the Okanagan Valley. These students will also learn how to measure soil CO<sub>2</sub> and N<sub>2</sub>O emissions at key points through the annual irrigation cycle, and will receive training in cutting-edge techniques for assessing soil properties and processes.

The first student will examine the contribution of organic C to soil C storage and CO<sub>2</sub> emissions. This student will learn techniques for quantifying water-stable aggregates to assess the stability of soil C pools,

and will employ novel  $^{13}\text{C}$  analyses to partition soil surface  $\text{CO}_2$  efflux into that released by respiring roots and rhizosphere biota and that released by the decay of older soil organic carbon.

The second MSc student will focus on the inorganic soil C pool, and how it relates to total soil C storage and  $\text{CO}_2$  emissions. This student will conduct a series of laboratory experiments to better understand how soil properties (e.g., soil texture, moisture, pH and C content) can influence the release of  $\text{CO}_2$  from irrigation water-derived bicarbonates and soil inorganic C. This student will employ novel  $^{13}\text{C}$  analyses to partition soil surface  $\text{CO}_2$  efflux into that released from organic and inorganic sources.

Qualifications: A background in Soil Science, Biology or Environmental Studies and a keen interest in agriculture, environmental health and ecosystem services. Valid driver's license is required.

Annual stipend: An annual stipend of \$20,000 will be provided. Scholarships are also available.

For more information about graduate studies in the Department of Biology at UBC-Okanagan, please visit <http://biol.ok.ubc.ca/graduate/biology.html>.

To apply for one of these positions: Please send your transcripts (unofficial versions are acceptable), CV and the names of two references to Drs. Melanie Jones ([melanie.jones@ubc.ca](mailto:melanie.jones@ubc.ca)) and Kirsten Hannam ([kirsten.hannam@ubc.ca](mailto:kirsten.hannam@ubc.ca)), and indicate which position interests you most.

## Events:

### CropConnect Conference, Feb 14-15, Winnipeg

The CropConnect Conference is being held at the Victoria Inn Hotel in Winnipeg. New this year to the conference is a poster session during the morning nutrition breaks. To accompany the poster presentations, a reduced student registration fee has been added to the registration page for those students interested in participating, however, the poster session is not restricted to students. Anyone with valuable research to share is more than welcome to submit a poster.

#### Poster Submission Deadlines:

Friday, January 12, 2018 - Deadline for submission of title and 25-word summary for use in the conference program and website

Monday, January 22, 2018 - Deadline for submission of poster abstract

Friday, February 2, 2018 - Deadline for submission of an electronic PDF version of poster

#### Poster Submission Guidelines:

Poster size no larger than 4' x 3'. Please bring 20-40 copies of your poster (8.5"x11") to hand out at the conference. Poster sessions will occur during the morning nutrition breaks at the conference - Feb. 14, 10:50 - 11:30 a.m. and Feb. 15, 10:00 - 10:50 a.m. Please be prepared to be present with your poster during this time and have a 30 second oral "poster pitch" prepared to highlight the main points of your poster and increase viewer interest. It is of particular importance poster participants are able to articulate why the project was funded and how it is important to farmers and their operations.

Poster participants have a reduced conference admission fee of \$50. If poster participants wish to volunteer, please let [laura@manitobapulse.ca](mailto:laura@manitobapulse.ca) know, and the admission fee will be waived. Volunteers will help in the morning with registration, directing traffic and conducting surveys with attendees in the p.m.

CCA credits will be offered for participants viewing posters and successfully completing a quiz based on the poster. If you would like your poster to be eligible for these credits, please submit 5 multiple choice questions in addition to your abstract submission.

Submit your title and summary by email by **Friday, January 12, 2018** to: [laura@manitobapulse.ca](mailto:laura@manitobapulse.ca)

In the body of your e-mail please include:

Project title. Author. Summary: Maximum 25 words, submit in the body of the e-mail.

If you have any questions, contact Laura Schmidt, Extension Co-ordinator, MPSG, O: 204-745-6488, C: 204-751-0538, [laura@manitobapulse.ca](mailto:laura@manitobapulse.ca), [www.manitobapulse.ca](http://www.manitobapulse.ca)

### **Joint Meeting of the CGU, CSSS, CIG, ES-SSA and CSAFM, June 10-14, 2018, Niagara Falls, ON**

Call for Session Proposals: [click here](#). To plan a session for the 2018 Joint Meeting, please submit your proposal, using the template, to [niagara2018JM@gmail.com](mailto:niagara2018JM@gmail.com)<<mailto:niagara2018JM@gmail.com>>. The proposal should include the concise session title, contact information and affiliation of the proposed session conveners or co-conveners, a short paragraph of up to 200 words describing the scientific content of the session, and the intended partner organization(s) audience. All session proposals should be received by **January 15, 2018**.

Joint Meeting website: <https://meeting2018.cgu-ugc.ca>. \*Note\* that the "Accommodation" section of the website has been updated recently so book your room ASAP and take advantage of reduced the conference rates.

### **International Conference and 69<sup>th</sup> International Executive Council Meeting of the International Commission on Irrigation and Drainage, August 12-17, 2018, Saskatoon, SK**

More Information: <https://icid2018.org/index.php>.

Abstract submission deadline: **24 April 2018**.

### **Manitoba Soil Science Society, 61<sup>st</sup> Annual General Meeting, Feb 1-2, 2018, Winnipeg**

The focus of the 2018 AGM is "Remembering the Dirty 30's: Lessons learned, forgotten and rediscovery", but submissions on other topics in soil science will also be considered. Both oral and poster presentations are welcome. Graduate student presentations are judged with awards for the best oral and poster presentations (PLEASE INDICATE IF YOU ARE A GRADUATE STUDENT WHEN YOU SUBMIT YOUR TITLE). Certified Crop Advisor Credits will be applied for.

Registration form is at the end of the newsletter.

Complete contact information and abstracts must be submitted by **December 20, 2017**. Abstracts will not be accepted after this date.

Abstracts are to include the Title, Authors, Author Affiliations and Abstract Text of less than 300 words. (ATTENTION GRADUATE STUDENTS: You must put an asterisk after your name on the abstract to be considered for an award). A sample with the required formatting is below.

### **SAMPLE ABSTRACT**

## **Nitrogen Uptake by Barley Grown in Chernozemic Soils Amended with Anaerobically Digested Manure**

Waraidzo Chiyoka<sup>1,2\*</sup>, Francis Zvomuya<sup>1</sup> and Xiyong Hao<sup>2</sup>

<sup>1</sup>*Department of Soil Science, University of Manitoba, Winnipeg, Manitoba, Canada.*

<sup>2</sup>*Agriculture and Agri-Food Canada, Lethbridge Research Centre, 5403 1<sup>st</sup> Ave. S., Lethbridge, Alberta, Canada*

Anaerobically digested manure (ADM) is a nutrient rich substrate co-generated during biogas production from anaerobic digestion of livestock manure. Currently, the separated solid fraction of ADM (SS) is commonly applied to cropland at rates equivalent to those for raw manure. We hypothesize that biophysicochemical changes occurring during anaerobic digestion may result in a digested product with a different N supplying power. We tested this using five, 6-wk cycles of forage barley (*Hordeum Vulgare L.*) grown in a Dark Brown and a Black Chernozem amended with raw beef cattle (*Bos taurus*) feedlot manure, SS, pelletized SS (PSS) and synthetic fertilizer (urea + monoammonium phosphate, UMP). Amendments were applied at rates calculated to supply 400 and 800 mg total N kg<sup>-1</sup> soil, with a control included for comparison. At each harvest, plant roots and shoots were harvested separately and analyzed for total N. Amendment-derived N content of total biomass was highest for UMP and manure, and lowest for PSS at both rates. The difference between manure and SS was higher at the higher amendment rate, while both PSS rates depressed N uptake relative to non-amended soils. Amendment-derived N also increased with increasing rate for all amendments except PSS. We conclude that anaerobic digestion does not alter N availability and uptake from beef cattle manure while pelletization of the solid fraction of digested manure can cause N immobilization and depress plant N uptake.

# CALL FOR PAPERS

## 61<sup>st</sup> Annual Manitoba Soil Science Society Meetings

Contact Information	
<b>Name</b>	
<b>Affiliation</b>	
<b>Address</b>	
<b>Phone</b>	
<b>Email</b>	
<b>Graduate Student (Yes or No)</b>	

\*Please note that we will be using e-mail as the primary means of contact.  
If you do not have access to email, please indicate your preferred means of contact:

Type of Presentation Preferred:
<input type="checkbox"/> Oral Presentation
<input type="checkbox"/> Poster Presentation
Title:
<b>Note that a LCD projector and laptop computer will be available for oral presentations. Please contact us if any other equipment is needed.</b>

Please submit the above information including your abstract as a .doc or .docx file by December 20<sup>th</sup>, 2017 to:

Email: [msss@cc.umanitoba.ca](mailto:msss@cc.umanitoba.ca)

Fax: 204-474-7642 (Attention: MSSS)

Or Mail: MSSS, c/o Department of Soil Science, 362 Ellis Bldg, University of Manitoba,  
Winnipeg, MB, R3T 2N2

For more information contact:

Kevin Baron

Email: [solumvalley@gmail.com](mailto:solumvalley@gmail.com)