

Feature

Contemplating the role for animal agriculture in environmentally sustainable food production

Recently, NCLE hosted a special seminar “Environmentally sustainable food production: What is the role for animal agriculture?” During this session, key presenter Henry Janzen, a senior scientist with Agriculture and Agri-Food Canada in Lethbridge, Alberta, encouraged the audience to seriously contemplate the long term sustainability of the millennia-old practice of raising animals for food. He stimulated reflection on the ways in which animal agriculture both stresses and benefits our environment, and how the balance shifts between the two, depending on your perspective. He proposed the road to truly long term sustainable livestock production, where the benefits were maximized and the negatives minimized, could perhaps start by imagining what raising animals for food could look like in the future, from the vantage of “land, broadly defined” and viewed through the lenses of ‘systems’, ‘place’, ‘time’ and ‘community’.

This multi-lense approach emphasizing improved benefits resonates with the NCLE approach to research, where multi-disciplinary teams focus on whole livestock production systems across a multitude of scales in place, time and scope to improve our understanding of multiple components within a variety of systems. Imagining these future livestock systems begins with learning more about existing farming practices to answer which practices and production systems generate the most benefit, how these systems might be improved further, and how we can apply this knowledge towards developing even more beneficial livestock-land systems. To this end, we’re studying long term carbon and nutrient cycling in various land and land-animal management scenarios; we’re comparing benefits and negative impacts of different cattle overwintering systems to identify the most sustainable practices; we’re assessing processing and treatment options as tools to add value and end-use diversity to agricultural by-products; we’re quantifying greenhouse gas emissions from a wide variety of land-animal management scenarios for multiple livestock production systems to better account for actual contributions; and we’re identifying opportunities to improve on-farm nutrient balances for a cross section of diversely managed dairy farms. These are a few examples, with more projects in place and being developed continually.



Both Janzen and the farmer/community leader response panel (Owen McAuley, Allan Preston and Gwen Donohoe) encouraged dialogue to communicate benefits and to better link all people in our ‘community’ to the land. By discussing animal agriculture and environmentally sustainable production of food with all stakeholders, from primary producers through to the general population, we all stand to benefit. Dialogue that includes researchers can help direct future studies to capture synergies and benefits, so that over time we will not only better tune existing systems, but potentially identify new livestock systems that benefit our earth and its resources.

Over the past few years, along with building our research program, NCLE has also been building relationships, exchanging ideas and information with industry, government and research stakeholders. In fact, many of our research projects are the result of this two-way communication – it is this dialogue that often illuminates research needs to advance our livestock industry. Our research in sustainable manure management and in identifying practices for sustainable cattle overwintering arose from the NCLE team’s engagement within the Achieving Manure Phosphorus Balance and the Extensive Cattle Overwintering Systems workshops, as well as numerous one-on-one conversations.



The sustainability of animal agriculture comes down to strengthening connections; between livestock and land as an ecosystem; between farmers and consumers yearning for a closer connection to the land and the source of their food; between the broader populace and the facts on environmental benefits/stressors that are a necessary part of providing food for a growing global appetite from a finite resource base. We all have a role to play.

This seminar now available **online** <http://media.cc.umanitoba.ca:8080/ramgen/faculties/agriculture/livestock&enviro2011.rm>
(Requires RealPlayer - Free download available at <http://www.real.com/realplayer>)

Instant Update

NCLE researcher Denis Krause receives award for Technical Innovation in Enhancing Production of Safe and Affordable Food from the Canadian Society of Animal Science

CSAS Halifax - The award recognizes **Dr. Krause's** contribution towards an improved understanding of the movement of pathogens in the farm ecosystem, which extends to elucidating linkages between agricultural land management practices and the etiology of chronic diseases in humans.



NCLE researchers share NCLE approach to research, education and extension at recent Canadian Society of Animal Science meeting

Kim Ominski, Animal Science and **Karin Wittenberg**, Associate Dean Research gave an invited presentation at the CSAS annual meeting in Halifax, May 4 & 5. Their talk, "Team-based research for sustainable livestock production" focused on NCLE's integrated systems-based approach to research, education, and outreach to improve the sustainability of livestock and crop production systems. **Christine Rawluk**, NCLE Research Development Coordinator hosted a poster session also highlighting the NCLE approach.

NCLE Researcher Don Flaten featured on CBC's The Nature of Things episode "Save My Lake"

This documentary hosted by Dr. David Suzuki, first aired April 3rd, takes a closer look at possible contributions to the growing frequency and expanse of algal blooms on Lake Winnipeg. A number of scientists actively engaged in trying to improve the water quality of Lake Winnipeg are featured, including **Don Flaten's** research measuring runoff loss of phosphorus from agricultural soils. Watch it here <http://www.cbc.ca/documentaries/natureofthings/2011/savemylake/>

Widespread interest in recent NCLE Special Session – recording now available online

Approximately 150 people attended the April 26th NCLE special session "Environmentally Sustainable Food Production: What is the Role for Animal Agriculture?" featuring **Henry Janzen**, **Owen McAuley**, **Allan Preston** and **Gwen Donohoe**. View the recorded session here <http://media.cc.umanitoba.ca:8080/ramgen/faculties/agriculture/livestock&enviro2011.rm>

All aboard!

Rain or shine, tours at NCLE just got more comfortable now that we have a specially constructed people transporter. If you would like to learn more about NCLE research, education and outreach activities, consider a tour at the Glenlea Research Station! Contact Christine Rawluk (Christine_rawluk@umanitoba.ca) for more information.

Our graduate students are on the move

Aaron Glenn (Ph.D.) recently accepted a position with Agriculture and Agri-Food Canada as the Cropping Micro-Meteorology Scientist at the Brandon Research Centre. **Waraidzo Chiyoka** (MSc.) recently joined Stantec Consulting.

Research Update

New project: Utilization of processed hog manure separation products in Manitoba – This multi-component research project will examine how to best utilize streams of separated/processed manure as well as identify opportunities to capitalize on the capacity of these processed manure products to improve yield and quality of multiple crops, including potato. This is the first project utilizing the infrastructure for the newly established NCLE Byproducts Processing Research and Demonstration Facility. Contact research lead **Mario Tenuta** (mario_tenuta@umanitoba.ca) to learn more. Project funding provided by Manitoba Pork, MRAC, and the Manitoba Horticultural Productivity Enhancement Centre.

Project funding: Manitoba Rural Adaptation Council funding awarded to two additional NCLE projects

- Developing algorithm for fertilizer equivalence of different manure – **Wole Akinremi**, MB Beef Producers
- NCLE long term sustainable nutrient management for manure applied to annual and perennial crops – **Don Flaten**, MB Pork

Thesis defense:

Waraidzo Chiyoka successfully completed her thesis defense March 23, 2011 – "Characterization of nutrient release and greenhouse gas emission from chernozemic soils amended with anaerobically digested cattle manure" Thesis advisors: **Francis Zvomuya**, soil remediation specialist at the University of Manitoba, and **Xiyong Hao**, AAFC-Lethbridge.