

Research & Extension Update

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UNIVERSITY
OF MANITOBA

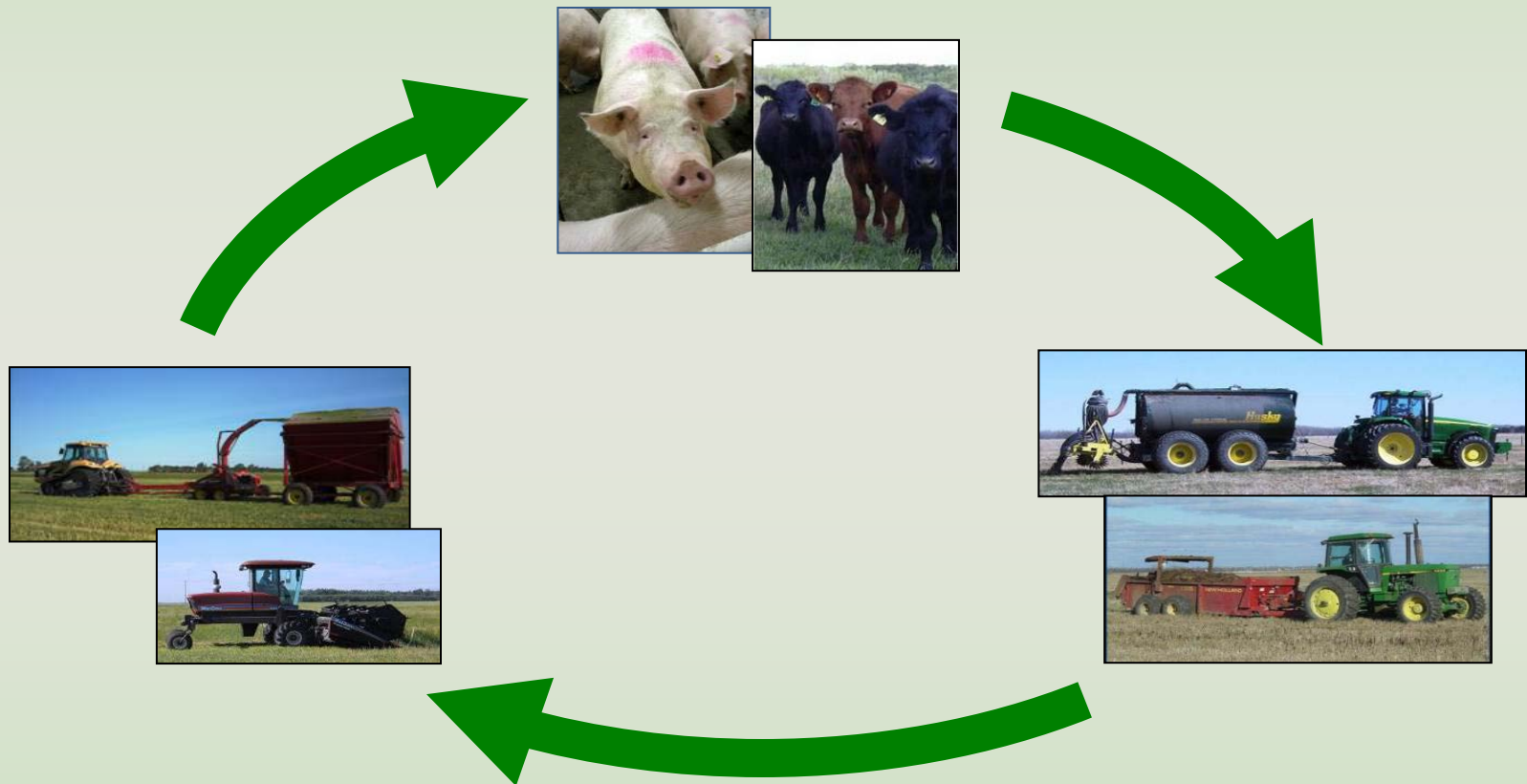


Advancing Solutions for Manitoba's Pork Industry

- On the Research Front
 - National Centre for Livestock & the Environment
 - Research results
- Knowledge transfer
 - Bruce D Campbell Farm & Food Discovery Centre
 - Public engagement




National Centre for Livestock & the Environment infrastructure is in place

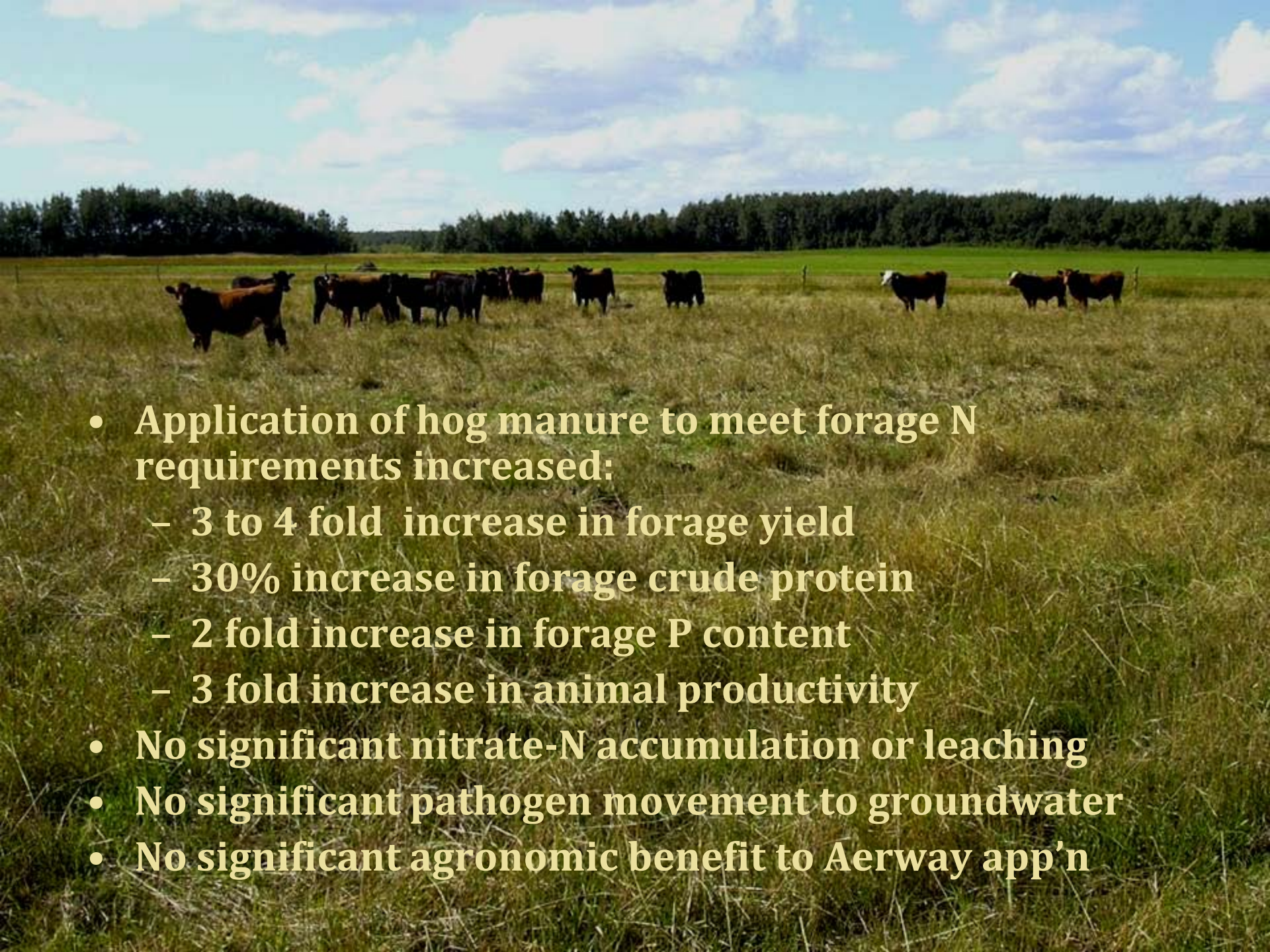


To do: By-products processing R&D facility, including composting for solid manures, solid-liquid separator for liquid manure

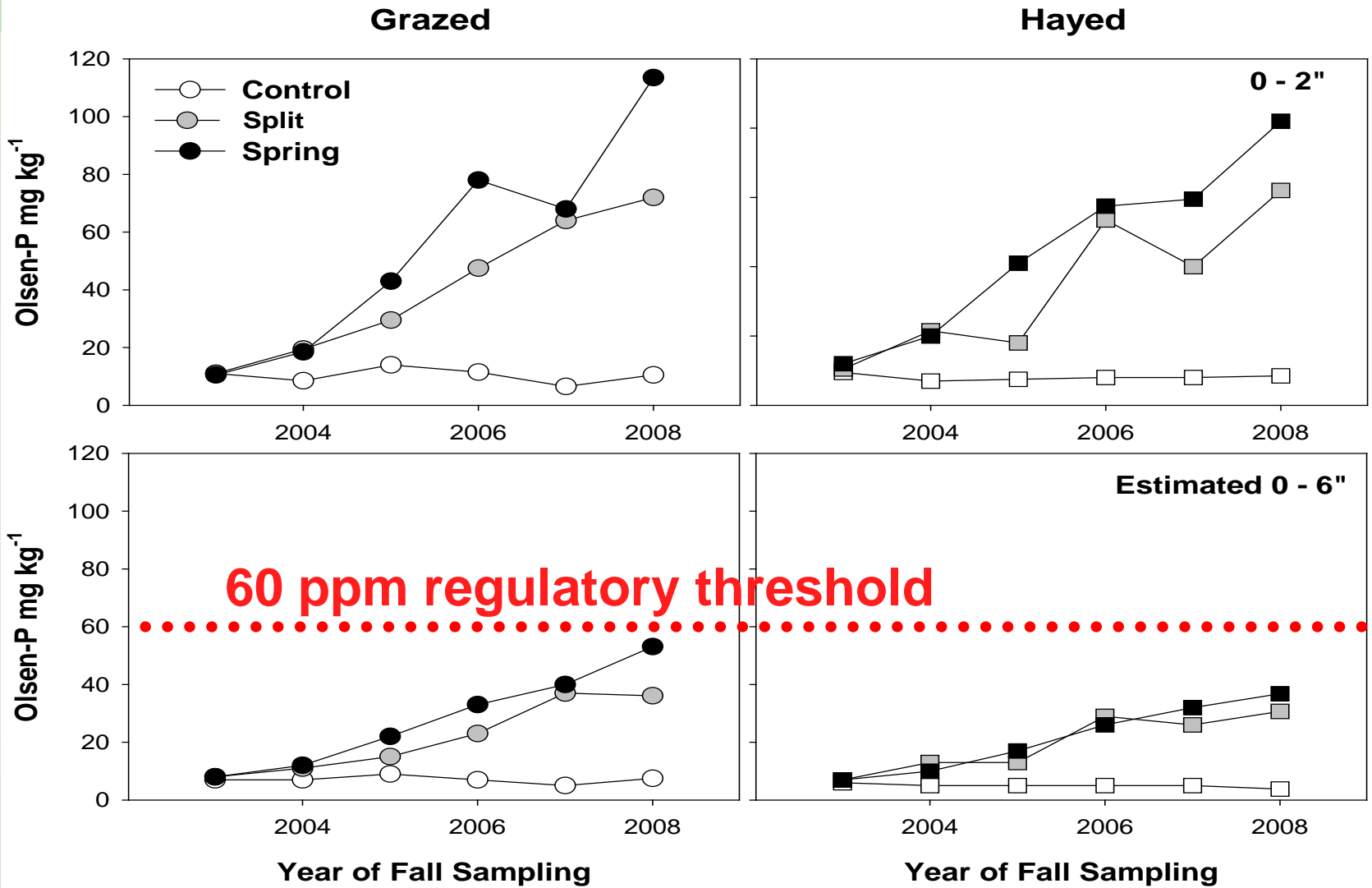
Long-term sustainability project providing production and environmental data under Manitoba conditions

M. Tenuta, K. Ominski, D. Krause, D. Flaten & others

- 98 acres Southeast Manitoba (La Broquerie)
 - Liquid Pig Manure application timing and rates
 - Control (no pig manure)
 - Fall & Spring Split application = 2 x 55 lbs N/ac
 - Spring application = 110 lbs N/ac (spring)
 - Forage Utilization Systems
 - Baled as hay
 - Grazed by cattle
 - Started fall 2003
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- An aerial photograph of a rural landscape in Southeast Manitoba. The scene features a mix of green fields, some with visible crop rows, and areas of dense trees. A prominent dirt road or driveway runs diagonally across the middle of the frame. In the lower right quadrant, there is a farmstead with a large blue-roofed barn and a smaller white structure. The overall terrain appears to be a rolling plain with scattered trees and well-maintained agricultural fields.



- **Application of hog manure to meet forage N requirements increased:**
 - 3 to 4 fold increase in forage yield
 - 30% increase in forage crude protein
 - 2 fold increase in forage P content
 - 3 fold increase in animal productivity
- **No significant nitrate-N accumulation or leaching**
- **No significant pathogen movement to groundwater**
- **No significant agronomic benefit to Aerway app'n**



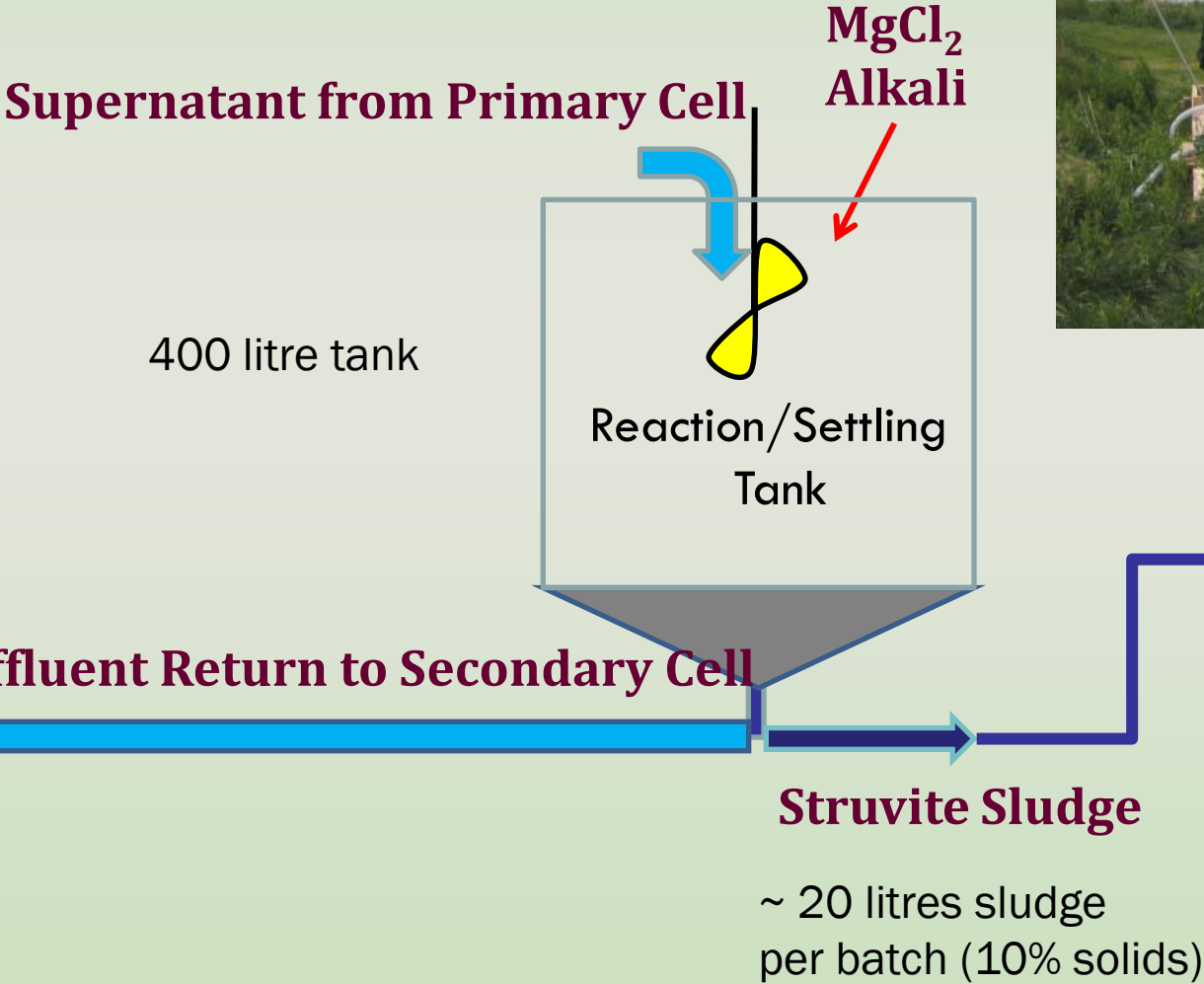
10-15 lb surplus P raises Olsen Soil Test P by ~ 1 ppm

Reclaiming P from liquid pig manure – as “struvite” (MgNH_4PO_4) from stored manure and from anaerobically digested manure

N. Cicek & J. Ackerman

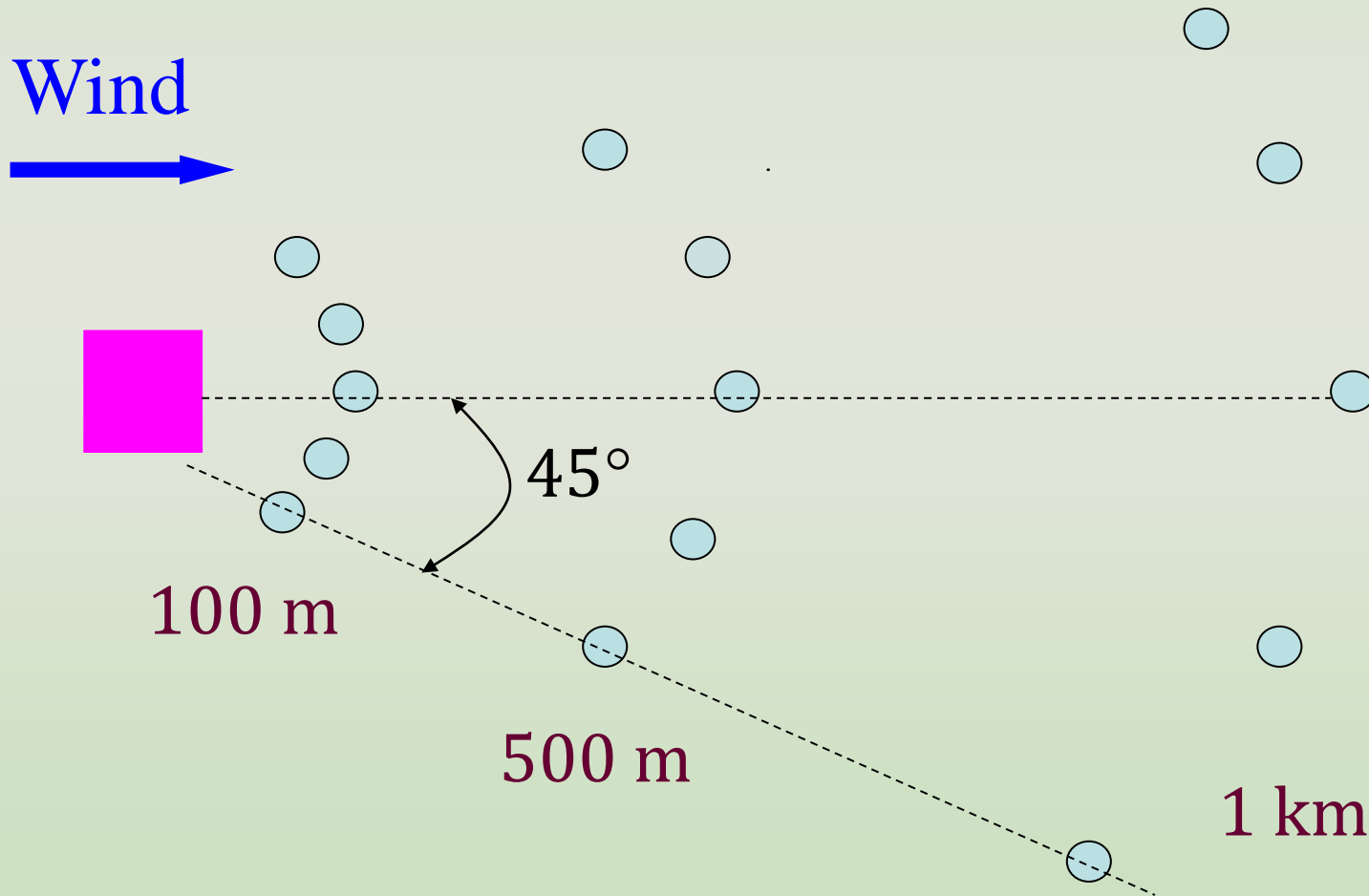


Successful development of a pilot reactor for struvite



Improved understanding of odour plumes to improve barn and manure storage system designs

Q. Zhang and X.J. Zhou

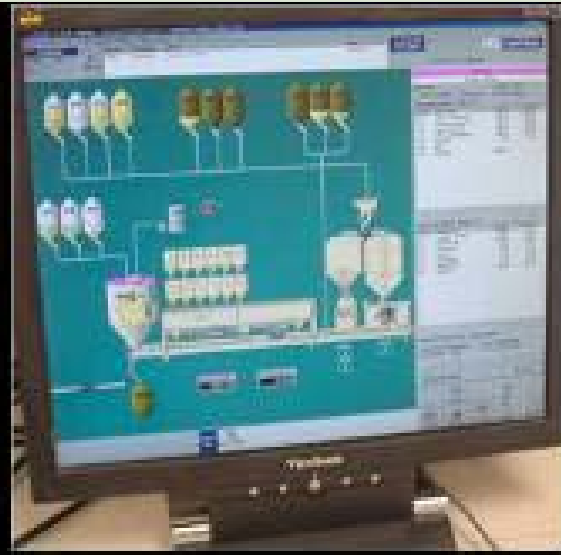


Long-term air sample collection methodologies create “average” odour values that do not reflect short-term peak odour levels



Finding alternative feed ingredients for Manitoba swine ration formulations

M. Nyachoti & E. Kiarie



Corn and wheat DDGS

Pea-canola mixtures

Low-phytate-P barley

Expeller-extracted canola meal

Zero-tannins faba beans

By-products - biodiesel industry

Extruded products

Full fat soybean meal

Hulless oats

Lentils

By-products - milling industry

Improved characterization of Mb feeds means increased resilience to commodity price fluctuation

Ingredient	ME	Dig. Lys	Dig. P
Wheat DDGS	3542	4.6	5.9
Corn DDGS	3897	4.6	4.1
Wheat/corn DDGS	3876	6.0	5.6
Hulless oats	4156	5.2	-
Co-extruded canola-peas-beans	6002	1.4	-
Co-extruded canola-peas	-	1.0	-
Hulless, low phytate barley	4022	3.4	2.5
Expeller canola meal	3978	16.4	-

.... and much more

- Quantifying economic value of manure as a nutrient source for farms across MB (Brewin & Gyles)
- Assessing the capacity of Manitoba soils to hold P and quantify the risk of downward movement of P from various types of manure (Akinremi)
- Development of a sow longevity profitability model using specific sow characteristics to predict the profitability of maintaining that animal in one's herd (Johnson & Connor)
- Effectiveness of policy measures aimed at reducing agricultural sources of nutrient loading in various watersheds (Johnson, Flaten, Brewin)

**Visit our website to learn more about these
and other NCLE research projects.**

<http://www.umanitoba.ca/afs/ncle>

Knowledge Transfer

The National Centre for Livestock and the Environment

environmental stewardship food quality & safety
farm productivity & viability
animal health & welfare
efficient energy & water use

NCLE January/February 2010 Newsletter

Research Feature Articles

Instant Update: People, Events, Research

Christine_Rawluk@umanitoba.ca

Tours: industry, international delegations, special interest groups, politicians & government



trace r&d | 2009

A research & development conference & strategic workshop for agriculture and food traceability.
Une conférence sur la recherche et le développement en traçabilité agricole et alimentaire



- 210 stakeholders (gov., academia and industry)
- every province & 7 countries
- R&D strategy





Don Flaten, NCLE Chair

Public presentations

Advisory activities

- Lake Winnipeg Stewardship Board
- Manitoba Ecological Goods and Services Stakeholder Knowledge Group
- Manitoba Manure Management Advisory Committee
- Manitoba Soil Fertility Advisory Committee

Getting the technology to you

- L. Connor, MPC Industry Performance Committee, did project on hip-injection techniques that was instrumental in getting national CQA approval to use hip-injection in sows.
- In an effort to advance needle free injection devices, M. Nyachoti will conduct an on-farm trial on the NFID use.
- Video on P recovery from liquid hog manure by J. Ackerman (ARDI sponsored)

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Animals in production systems

