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## National Centre for Livestock and the Environment (NCLE)

### NCLE Feed Processing Facility at Glenlea Research Station and the University of Manitoba Poultry Research Facilities

#### HIGHLIGHTS OF A FEW POULTRY/FEED MILL PROJECTS

1. Development of Manitoba-based computer models for Nutrient Management - Ca, P Laying Hens.

Researchers: J. D. House, E. Kebreab, W. Guenter

Funding: Manitoba Rural Adaptation Council  
Manitoba Egg Producers  
University of Manitoba

Three Objectives:

A. Acquisition of Nutrient Balance data for Laying Hens housed under two distinctive cage systems:

- a) Conventional Cages: 5-6 hens/cage
- b) Euro Enriched Cages: 24 hens/cage
  - Scratch Pad
  - Nesting Area
  - Perches
  - Nail files

B. Develop a computer model based on data acquired under A.

C. Testing, Refinement and Extension of the model through the use of experimental strategies designed to reduce Phosphorus excretion by laying hens.

2. Wheat distillers dried grains with solubles (DDGS) in Livestock and Poultry Nutrition.

Researchers: B. A. Slominski, C. M. Nyachoti, K. Plaizier and K. Wittenberg.

Funding: Husky Energy/NSERC/ARDI/Western Economic Diversification/University of Manitoba

Objectives:

A. Characterization and Implementation of Wheat DDGS in Animal and Poultry Feed Programs.

B. Enhancement of Wheat DDGS Nutritive Value using Enzyme Technology.

C. Incorporation of Enzyme treated DDGS in diets for poultry and swine.

D. Use of Wheat DDGS-Based diets for Ruminants.

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## Manitoba Poultry Research Facilities

### HIGHLIGHTS OF A FEW POULTRY/FEED MILL PROJECTS

3. Nutrient Utilization and performance responses of broilers fed a wheat -based diet supplemented with phytase and xylanase alone or in combination.

Researchers: C. M. Nyachoti and W. Guenter.

Funding: Danisco Animal Nutrition/ARDI.

Conclusion: Phytase addition improved phosphorus and calcium utilization but showed no synergistic effect with xylanase.

4. Thermo-Protective Technology Coated- Escherichia coli Phytase effect on performance and nutrient utilization in broilers fed corn soybean meal-based diets.

Researchers: C. M. Nyachoti and W. Guenter.

Funding: Danisco (UK) Ltd. Marlborough.

Conclusion: The addition of thermo-protective technology coated or uncoated phytase improved performance of broiler chicks fed mash or pelleted diets indicating that there was no difference between the protected or unprotected phytase. Both phytase sources improved P digestibility, retention and tibia ash of chicks.

5. Performance and Welfare of Laying Hens in Conventional and Enriched Cages.

Researchers: J. D. House, W. Guenter, N. Lewis and J. C. Rodriguez-Lecompte.

Funding: Manitoba Egg Produces/University of Manitoba.

Conclusion: The results of the study provided evidence that production, performance, egg quality and mortality of laying hens were similar between the two cage designs. However the incidence of dirty eggs increased with the enriched cage system. Incorporation of perches in the enriched systems resulted in a higher bone density which may help to reduce fractures and osteoporosis at an older age. Immulogical measurements suggested that the stress level was similar in the two cage systems.