

*"Evaluation of distillers' grains from ethanol plants for feedlot cattle"*

**Project No. 0007-105**

**Research Institution:** Agriculture and Agri-Food Canada, University of Saskatchewan

**Lead Researcher:** Dr. Wenzhu Yang (AAFC) and Dr. John McKinnon (UofS)

### **Objectives:**

- Develop a database for the nutrient composition and fermentation of DDGS;
- Determine nutrient digestibility and environmental impact when feeding DDGS derived from wheat vs. corn;
- Develop nutritional strategies that incorporate wheat-based DDGS into finishing rations as a substitute for silage;
- Determine impact of wheat- vs. corn-based DDGS on acidosis, digestive upsets, finishing performance, eating behavior and carcass quality traits of cattle.

**Background:** Distillers' grains are the residue left over when grain is fermented to produce ethanol for biofuel. Combined with extremely high feed barley and corn prices, increased production of distillers' grains has led to the widespread use of these byproducts in feedlot diets. Since the fermentation process removes only the starch from the grain, other nutrients (e.g. fat,

protein, fiber and minerals) are concentrated in the byproducts. Distillers' grains have been successfully used in backgrounding diets for many years, but they are now being used at higher levels feedlot finishing diets.

These researchers are analyzing the variability in nutrient content in samples of wheat- and corn-based distillers' grains from different ethanol plants. They are also looking at the impact of feeding higher levels of corn- vs. wheat-based distillers' grains on digestibility, animal performance, health, and carcass quality of feedlot cattle, as well as the effect on nitrogen and phosphorus content in the manure. This project is scheduled to be completed in 2010.

**Implications of the Research:** High feed costs are reflected in low calf prices. Developing appropriate feeding strategies relevant to Western Canadian feedlot operators will help to offset the negative economic and environmental ramifications currently facing the beef industry.

