

ADF Livestock and Forage Projects 2010

21 projects **\$2,539,339**

Breakdown by Commodity

Cattle	\$786,029
Forages	\$723,297
Swine	\$482,955
Meat Processing	\$283,058
Bison	\$250,000
Sheep	\$14,000

Breakdown by Organization

University of Saskatchewan	\$1,724,346
Prairie Agricultural Machinery Institute and the Western Beef Development Centre	\$445,118
Saskatchewan Bison Association	\$250,000
Prairie Swine Centre	\$119,875

Detailed information on approved projects is available at www.agriculture.gov.sk.ca/ADF.

Summary of ADF Approved Projects 2010 Livestock and Forage Research Funding

University of Saskatchewan

College of Agriculture and Bioresources

Department of Animal and Poultry Science

51 Campus Drive, Saskatoon, SK S7N 5A8

Integration/Feeding Value of Newly Developed Hulless Barleys (High Energy) and New Co-products in Sustainable Beef and Dairy Production

Objectives:

Funding: \$98,000

- To evaluate the nutritive value of new varieties of hulless barley lines recently developed by the Crop Development Centre. The new varieties vary in their structural carbohydrate values and ratios. These varieties are expected to have extremely high total digestible nutrients (TDN), digestible energy, metabolizable energy and lower rumen degradation rate and extend suited for both dairy and beef cattle.

Contact: Peiqiang Yu (306) 966-4132

Branded Feed Products for Cattle from By-Products of Grain, Pulse and Oilseeds Processing

Objectives:

Funding: \$120,500

- To develop specific, value-added pelleted feed products for the cow-calf and cattle feeding industries using by-products arising from industrial processing of Saskatchewan grown pulses, oilseeds and cereal grains.

Contact: John McKinnon (306) 966-4137

Effects of Pro-melanin Concentrating Hormone (PMCH) genotype in a Cow/calf Setting

Objectives:

Funding: \$47,967

- To study the effects of a polymorphism in PMCH on lactation in cow/calf. PMCH has shown improved fat deposition leading to shorter times to finish to target backfat and tender beef. This could be a useful to help producers sort and select the cattle within their herds, which could impact both efficiency of production and market development potential.

Contact: Sheila Schmutz (306) 966-4153

Effects of Galanin Receptors and DEAF1 Genes on Cattle Production and Welfare

Objectives:

Funding: \$90,596

- To study polymorphism in Deformed Epidermal Autoregulating Factor-1 (DEAF-1) for association with behaviour, production and carcass characteristics that develop genetic marker for selection. Project has potential to develop a genetic marker for feed efficiency and therefore optimize returns to the producer.

Contact: Fiona Buchanan (306) 966-4160

Department of Food and Bioproduct Sciences

51 Campus Drive, Saskatoon, SK S7N 5A8

Improving Quality, Safety and Competitiveness of Lean, Low-sodium Meat Products

Objectives:

Funding: \$283,058

- To increase the consumption of Saskatchewan raised livestock meat by developing novel low and ultra-low sodium containing lean beef, pork, poultry sausages and deli meats.

Contact: Phyllis Shand (306) 966-8842

Department of Plant Sciences and Crop Development Centre

51 Campus Drive, Saskatoon, SK S7N 5A8

Practical Ways of Determining Optimal Forage Carryover Thresholds Needed to Sustain Forage Production on Rangelands in Saskatchewan

Objectives:

Funding: \$158,965

- To determine simple and practical guidelines for determining the optimal amount of carryover plant material needed after grazing to sustain or increase future forage production.

Contact: J.T. (Jim) Romo (306) 966-4966

Development of Forage Barley Cultivars with Improved Yield and Nutritive Value

Objectives:

Funding: \$60,000

- Improve the yield and nutritive value (lower ADF and higher TDN) by selecting smooth awned cultivars from populations generated from crosses with CDC Cowboy and other forage barley germplasm.

Contact: Bruce Coulman (306) 966-1387

Enhancing Seed Production of Plains Rough Fescue for Saskatchewan Forage and Seed Producers

Objectives:

Funding: \$86,714

- To identify historical weather patterns associated with good seed years.
- To assess ecotypic and genotypic variation in vernalization requirements in the field and growth chambers.
- To quantify the effect of vernalization temperatures and moisture and simulating spring and fall growth conditions on floral induction under controlled growth environments.
- To assess changes in growth regulators such as abscisic acids and gibberellic acids during the transformation from vegetative to reproductive meristems.

Contact: Yuguang Bai (306) 966-4955

Department of Soil Science

51 Campus Drive, Saskatoon, SK S7N 5A8

The Impact of Long-Term Manure Application and Cessation of Application on Saskatchewan Soils

Objectives:

Funding: \$93,890

- To determine the long-term (>10 yrs) effects of repeated swine manure applications on soil properties and crop growth.
- To assess the effects of ceasing manure application on how long the benefits that have accrued in soil though the addition of organic matter and nutrients from manure may persist, and the extent to which excess nutrient loads from over-application can be reduced.

Contact: Jeff Schoenau (306) 966-6844

College of Engineering

Department of Chemical Engineering

57 Campus Drive, Saskatoon, SK S7N 5A9

Treatment of Swine and Food Processing Wastewaters and Generation of Electricity Using Microbial Fuel Cell Technology

Objectives:

Funding: \$104,190

- To develop a complete, environmentally-friendly microbial fuel cell that generates electricity while treating agricultural wastewaters such as from food processing plants and swine barns.

Contact: Mehdi Nemati (306) 966-4769

Vaccine and Infectious Disease Organization

Vaccine and Infectious Disease Organization

120 Veterinary Road, Saskatoon, SK S7N 5E3

A Novel Approach to Protect Offspring Against Neonatal Diarrheal Disease

Objectives:

Funding: \$195,000

- To study the use of adeno-associated virus to deliver genes coding for proteins of interest into the mammary epithelial cells which will then be able to produce host defence peptides in milk for the uptake of a suckling calf.

Contact: Heather Wilson (306) 966-1537

Western College of Veterinary Medicine

Western College of Veterinary Medicine

52 Campus Drive, Saskatoon, SK S7N 5B4

Towards Control of Porcine Postweaning Wasting/Catabolic Syndrome: A New Disease Causing Severe Nursery Mortality

Objectives:

Funding: \$165,000

- To identify a cause and control program and provide education and awareness of PWCS.
- There is a strong need for the education that will include general control principles such as biosecurity within the industry as is applicable to this disease. If this PWCS disease becomes more prevalent, with a five to eight per cent mortality it will result in significant loss in production for producers as well as economic loss. Surviving pigs grow slower and remain smaller than unaffected pigs, further adding to the economic loss for producers.

Contact: John Harding (306) 966-7070

The Epidemiology of Taenia Ovis Infection in Saskatchewan Sheep Flocks

Objectives:

Funding: \$14,000

- To determine if the coyote population in Saskatchewan carries the adult tapeworm form of Taenia ovis.
- To determine the prevalence of Taenia ovis infection in farm dogs on Saskatchewan sheep farms.
- To identify effective management strategies which reduce sheep infection with Taenia ovis.
- To determine if interventions used on farms infected with Taenia ovis can be used to reduce the number of carcasses condemned.

Contact: Chris Clark (306) 966-7165

The Trace Mineral Status in Beef Cattle at Calving and its Association with Neonatal Calf and Peri-partum Cow Health

Objectives:

Funding: \$93,000

- To determine the prevalence of trace mineral deficiency in cows and calves at calving.
- To assess the changes in trace mineral status in cows and calves during the pre-breeding period under field conditions.
- To evaluate the association between trace mineral status of cows and calves at calving and calfhood diseases as well as calving complications (scours, pneumonia, navel ill, still birth, retained placenta, etc.).
- To compare the trace mineral status of cattle that supplemented free-choice compared to cattle force-fed mineral through a totally mixed ration.

Contact: Steven Hendrick (306) 966-7062

The Effect of Feeding Dried Distillers Grains on the Animal Health of Feedlot Cattle

Objectives:

Funding: \$56,000

- To evaluate the animal health and performance indices of yearling cattle being finished on a ration containing variable quantities of wheat-based dried distillers grains and solubles (DGGs).
- To investigate the sulfur metabolism of cattle being fed wheat-based DGGs.
- To assess whether differences in rumenal, hepatic, brain and distal limb lesions exist between cattle fed DDGS and not.

Contact: Steven Hendrick (306) 966-7062

The Characterization, Economics and Mitigation of Lameness in Canadian Feedlot Cattle

Objectives:

Funding: \$57,466

- To characterize the causes of lameness in western Canadian feedlots.
- To calculate the economic cost associated with feedlot lameness.
- To develop lameness mitigation strategies for Canadian feedlots.

Contact: Steven Hendrick (306) 966-7062

Prairie Agricultural Machinery Institute

Prairie Agricultural Machinery Institute

Box 1150, Humboldt, SK S0K 2A0

Short Rotation Forage Legumes for Reducing N Fertilizer Costs in Saskatchewan

Objectives:

Funding: \$231,018

- To determine the crop available residual soil N from short-rotation (two years) legume hay crops and calculate the energy requirements and economic returns for each rotation system.

Contact: Paul Jefferson (306) 682-3139 Ext. 272

Western Beef Development Centre (WBDC)

Box 1150, Humboldt, SK S0K 2A0

Reducing Cost of Backgrounding Calves with Extended Fall Grazing of Annuals

Objectives:

Funding: \$27,500

- To study whether warm or cool season annual crops (foxtail millet or forage barley) can provide adequate nutrition for backgrounding weaned calves under a stock-pilled windrow or swath-grazing system.

Contact: Bart Lardner (306) 682-3139

Utilization of stockpiled perennial forages

Objectives:

Funding: \$186,600

- To evaluate grazing stockpiled grass-legume forage versus feeding hay in drylot pens including: (i) the effect of grazing stockpiled perennial forages on animal performance; (ii) whether cows grazing stockpiled forages require (consume) less forage than feeding cows a similar forage (hay) in drylot and quantify the amount of stored forage required to maintain equivalent body condition in multiparous pregnant cows; (iii) determine the effect of field grazing stockpiled perennials (grass-legume) on herbage mass, forage quality and botanical composition and compare the nutritive value of stockpiled forages during winter months; (iv) assess the effect of field grazing stockpiled perennial forage on soil nutrients, plant nutrient uptake and recycling, in consecutive years; and (v) estimate winter production costs (\$/cow/day) for grazing stockpiled forage or fed similar hay in drylot.

Contact: Bart Lardner (306) 682-3139

Saskatchewan Bison Association

Saskatchewan Bison Association

Box 31, Regina, SK S4P 2Z5

Benchmark Study for Cost of Production and Performance Measures for Bison from Cow/calf to Carcass.

Objectives:

Funding: \$250,000

- To assist the bison industry with its competitiveness by benchmarking existing cost of production and performance so producers will be able to see how they compare to the rest of the industry and take steps to improve performance and profitability. The project could provide producers and industry with cost of production data and performance measures for bison from cow/calf to carcass.

Contact: Terry Kremeniuk (306) 522-4762

Prairie Swine Centre

Prairie Swine Centre

2105 – 8th Street East, Saskatoon, SK S7H 5N9

Benchmarking Water Use and Developing Strategies for Water Conservation in Swine Production

Objectives:

Funding: \$119,875

- To identify and compile current water conservation management practices and to conduct benchmark survey on actual water use per pig produced in Saskatchewan. The information derived from this project will help develop technologies for water conservation practices.

Contact: Bernardo Predicala (306) 667-7444