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# RESEARCH

## **MBP (formerly MCPA) is involved in numerous research projects with the**

University of Manitoba, Manitoba Government and other industry research partners. Last year, MBP developed our top research priorities and presented them to our research partners to develop proposals and projects that meet our needs in the cattle industry in Manitoba.

### Solid Cattle Manure as a Nutrient Source

One of the research projects we are involved in is the study on Solid Cattle Manure as a Nutrient Source. This project is led by Don Flaten at the University of Manitoba, Department of Soil Science. Cattle manure is a good source of several plant nutrients, however, little is known about the availability of nutrients from solid manure. Research in the field of solid manure will help prepare producers for regulations pertaining to livestock manure. Three years of field trials have already been completed, and the final results of the research will be completed by March 31, 2011.

### Development of an Algorithm for Fertilizer Equivalence of Different Manures

MCPA is also involved in the study of the Development of an Algorithm for Fertilizer Equivalence of Different Manures. This study will evaluate nutrient release from different animal manures, and will determine the effect of soil temperature and moisture on manure nutrient release. It will examine the interactions between soil properties and manure characteristics, and how they influence manure nutrient release. Throughout the research process, they will develop a user-friendly computer or web-based model to estimate the fertilizer equivalence of livestock manure that can be used by cattle producers in Manitoba.

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### Assessment of Grasslands in Manitoba

The University of Manitoba is doing a lifecycle analysis, and MCPA is involved in the Assessment of the Value of Grasslands in Manitoba. This project will develop a strategy for forage and grassland management through an examination of the multi-functionality of forage productivity and sustainability, including nutrient management, biodiversity, erosion and water management, and agri-tourism. This study will also develop a profile or baseline of both land management and forage production/utilization practices in Manitoba, and will develop low cost feeding strategies utilizing forages. This data will be used to assess the multifunctional value of Manitoba grasslands and wetland areas in terms of their ability to sequester carbon, enhance biodiversity, and reduce water erosion.

### Farm Management and Marketing Strategies in the Canadian Beef Sector

Farm Management and Marketing Strategies in the Canadian Beef Sector is an economic analysis to examine the cattle basis in Western Canada overtime, and to extract patterns of behavior that can contribute to improved forecasts. This study will develop basis forecasting models and consider marketing strategies, including hedging rules, based on the market information available.

### Brandon Research Station Tri-Party Agreement

MCPA signed a 4 year agreement with the Brandon Research Station to conduct various research projects over this period of time. The agreement includes the development of novel forage-based backgrounding, finishing, and beef production systems, which reduce economic and environmental input costs. Another research project is to determine the impact of supplementing forage beef cows during wintering months with DDGs on animal productivity, nutrient excretion, and on the economic viability of feeding DDGs to beef cows. The agreement also includes the development of sequential grazing systems comprising high quality perennial forages and swath grazed annual forages to produce forage finished beef with fatty acid profiles. Due to weather conditions of conducting this research, the project was amended. For the upcoming year, the research team will conduct a Meat Quality Analysis of rib eyes from steers from the Time of Calving project and an analysis of the long-term Manitoba Beef Production Systems data. This involves a trained taste panel evaluation of meat samples to determine the impact of time of calving and finishing system on beef taste and tenderness, an analysis of meat composition, including moisture, protein, and fat, and lastly, fatty acid profiles and an economic analysis of production systems and meat quality.

### Microbial-Based Diagnostics for Johne's Disease

In conjunction with two other projects at the University of Calgary and University of Saskatchewan, MCPA is participating in the study on Microbial Based Diagnostics for Johne's disease in cattle. Manitoba's contribution is to evaluate the micro biome of the digestive tract with next generation sequencing technology and gut microbial ecology, and how other microorganisms accompany the MAP infection. It will characterize key samples from these two projects, and identify other microorganisms that may be involved in the co-infection. It is anticipated that this co-infecting microorganisms would be easier to multiply and become the basis for a new diagnostic.

### Integrated Crop/Livestock Systems

The MCPA has recently given a letter of support to the Zero Till research project involving integrating livestock and cropping systems in a zero tillage production system. Integrated management of two systems is said to be beneficial to both the livestock and cropping systems individually, and is a key component for achieving long-term sustainability. This project will focus on three areas, improved perennial pasture production, alfalfa production and grazing, and annual forage polyculture cover crop production and grazing.

### Residual Feed Intake

The University of Manitoba submitted a research proposal to the MCPA on Residual Feed Intake. This project is currently being considered by the MCPA to determine if it meets our research priorities. One of our research priorities is to develop options so producers can retain and sell calves at the 8-9 weight range rather than 4-5 weight range, and to achieve these weights as cheaply as possible. Another research priority is to develop innovations to improve feed efficiency utilization, with the intent to reduce cost per pound of gain. The Residual Feed Intake proposal could meet these two research priorities with further development.