

## **FEED RESEARCH AND DEVELOPMENT**

**SRP Chair:** Dr. Peiqiang Yu

### **Introduction**

Crops and livestock are the most significant agricultural sectors in Saskatchewan. The overall objective of the feed Research and Development capacity area is to identify unique characteristics in Saskatchewan feedstocks and to develop and/or assist to develop associated feeding technologies and processes that increase the feeding efficiencies and create new products. The desired outcome is to increase the utilization of high quality feeds and technologies to improve our competitive advantage and to increase the sales of targeted Saskatchewan feedstocks, technologies and value-added products in domestic and export markets. This will be accomplished through applied research in nutrition, feeding systems and feed processing in collaboration with appropriate existing research expertise at the University of Saskatchewan and Agriculture and Agri-Food Canada, Western Beef Development Centre and commercialization efforts with industry. In addition, the program will collaborate closely with existing researchers and graduate students in animal nutrition, feed processing and crop and forage breeding, further enhancing the existing critical mass in ensuring that optimal benefit flows to industry.

### **Goal**

To enable development and commercialization of research technologies developed in Saskatchewan and world wide to extract increased value from our feedstuff, improve the competitive position of our livestock industry, and to increase economic returns to Saskatchewan.

### **Research and Program Activities:**

This program will include livestock nutrition, feeding systems and unique feed constituents, integrated with research in physiology, biotechnology, genetics, and other basic sciences to:

- Conduct research that will develop and/or assist to develop Saskatchewan-based feed products and evaluate new feed ingredients.
- Conduct research that will assist the development of cost competitive feeds.
- Conduct research to improve feed quality and market value of existing feeds
- Conduct research that will aid in feed-crop and forage breeding programs for selecting superior varieties and/or for prediction of feed-crop and forage quality and nutritive value for animals.
- Supervise graduate students.
- Interact with the industry to further advance development of feed stocks with bioactive properties.

### **Program Outputs**

- Creation of a systems-based research strategy aligned with Ministry of Agriculture and industry priorities that enhance the economic viability of the integrated crops-livestock production system.
- Optimized feeding systems and linking key feed constituents to specified consumer products, including high value designer products.
- New feedstocks with pro- or pre-biotic characteristics that enhance animal health, productivity, and consumer product quality and safety.
- Increased livestock feed efficiencies with reduced input costs and reduced environmental nutrient and green house gas loading.
- Access to global technologies and practices that industry can commercialize into differentiated, higher value Saskatchewan products.
- Access to research results by Ministry of Agriculture staff which will implement technology transfer strategies and sector development.

### **Desired outcomes**

- Efficient, environmentally sustainable and profitable livestock industry.
- Increased livestock and feed production efficiencies tied to improved livestock product quality and reduced environmental impact.
- Improved livestock production efficiency and product quality and safety attributes resulting in increased profitability and competitiveness.
- Improved functionality, nutritional value and cost of production for feeds derived from Saskatchewan commodities and ingredients
- Highly qualified people trained in ruminant nutrition and feed science.