Current Research Projects 2003

Dairy Farmers of Ontario are currently funding the following research projects.

**Cow Longevity Projects**

**L-#01**
**Lead Researcher: Dr. Ken Leslie, OVC, University of Guelph**
**Title: Investigation into Strategies to Enhance Longevity of Dairy Cattle in Ontario**

This is a multi-faceted project designed to look at several animal health aspects as they relate to cow longevity. It is hypothesized that specific aspects of udder health management, reproductive programs, and transition cow disease prevention can be changed to improve the longevity of Ontario dairy cattle.

The deliverable at the conclusion of the project will be a management tool to estimate the economic impact of premature removal of cows from a herd. Research initiatives will involve analyzing associations between Benchmark 2000 responses, DHI and DFO databases, monitoring culture, clinical, SCC results, and various related mastitis management practices as they relate to culling decisions, refining cowside test protocols for the prediction of health disorders, and, determining the impact of subclinical ketosis and controlled breeding programs on longevity.

**L-#02**
**Lead Researcher: Dr. John Walton, OAC, University of Guelph**
**Title: New Breeding Methods to Increase Fertility of Dairy Cows.**

The purpose of this work is to develop new programs to accurately determine the timing of ovulation in postpartum dairy cows and to determine if supplemental progesterone after insemination can reduce early embryonic mortality.

**L-#03**
**Lead Researcher: James Fisher, Kemptville Campus, University of Guelph**
**Title: Calculating Economic Benchmarks for Longevity**

This project will identify interactions between production parameters and age. These relationships will then be modeled to calculate economic cost of longevity, payback period, optimum age for replacement and maximum profit. Data will be collected at the farm level to establish economic benchmarks to use in the model.

**L-#04**
**Lead Researcher: Dr. Brian McBride, OAC, University of Guelph**
**Title: Improving Health and Productivity of the Transition Cow as a Contribution to Longevity.**
The purpose of this work is to improve the health and productivity of the transition cow and thereby enhancing cow longevity. Specific objectives include development of an experimental model to induce acute ruminal and metabolic acidosis in transition cows, examining the effects of acidosis on tissue growth and immune function, and, examining the effects of providing supplementary glutamine in transition cows with acidosis.

L-#05
Lead Researcher: Paul Sharpe, Kemptville Campus, University of Guelph.
Title: Investigation of Accelerated Growth of Heifers as a Strategy to Enhance Longevity of Dairy Cattle in Ontario.

The purpose of this project is to compare the effects of age at puberty, age at breeding, age at calving, milk production in first and subsequent lactations and lifetime production due to two different growth diets in pre-pubertal heifers.

Value-Added Projects

VA - #01
Lead Researcher: Dr. Mansel Griffiths, Food Science, University of Guelph
Title: Microbial and Enzymatic Modification of Milk to Produce Valued-Added Products.

The purpose of this research project is to produce antimicrobial and immunomodulating compounds from milk using microorganisms and enzymes with known proteolytic activity and to investigate whether cultures act synergistically to produce these agents. The deliverable will be to identify novel compounds with pharmaceutical and food applications.

VA- #02
Lead Researcher: Dr. Y. Mine, Food Science, University of Guelph.
Title: Impact of Milk Proteins as Nutraceuticals to Enhance Intestinal Human Health.

The overall purpose of this research is to enhance human intestinal health using natural food-derived peptides from milk. This project will develop platform technologies required to produce nutraceuticals from milk and build novel biomedical or medicinal foods with specific health benefits from milk.

VA - #03
Lead Researcher: Dr. John Kramer, Food Research Program, Agriculture and Agri-Food Canada, Guelph
Title: Production and Characterization of Bovine Milk with Increased Levels of Nutritionally Functional Fatty Acids

This is a multi-disciplinary study involving four senior researchers at two research establishments, AAFC and the University of Guelph.

Omega-3 polyunsaturated fatty acids and conjugated linoleic acid (CLA) have both been shown to be associated with increased human health benefits. Levels of these fatty acids have been increased in milk in separate research projects. This project is aimed at producing milk that has combined the increased levels of omega-3 polyunsaturated fatty
acids and CLA. Such a product with significantly increased levels of both of these beneficial fatty acids would create several potential marketing opportunities for the dairy industry.