Dairy Farmers of Canada

Research Highlights 2015-2016

Dairy Research Cluster

Dairy Research for a Healthy World.

DFC Research Investment Impact

2015-2016 Total Research Value **$6.6 million**

4 Main Partners

- Dairy Research Cluster
- Organic Science Cluster
- ESAC
- Dairy Research Consortium
- DairyGen
- Industrial Research Chairs (5)

57 Research Projects

6 Research Programs

130 Students (PhD, MSc, undergrad)

160 Scientists

15 Canadian Universities

1 Communications and Knowledge Transfer Plan

10 Federal Research Centres

2 International Research Institutions

Research investment benefits for the dairy sector, the Canadian economy and Canadians' health:

DAIRY GENETICS AND GENOMICS

- Canadian dairy genetics are among the best in the world! Since 1988, the total value of Canadian dairy genetic exports, including dairy cattle, embryos and semen rose from $68 million to $140 million in 2015.
- Breeding and genetic improvements have resulted in a 178% increase in milk production per cow from 1970 to 2015 (5,763 kg compared to 10,257 in 2015).
- The average Canadian dairy herd has experienced a faster rate of genetic gain in the past five years due to genomics, increasing genetic progress in Holsteins. Before genomics, the net benefit per cow per year was $84. With genomics (since 2009) that benefit is $171/cow/year (based on Pro$ research).

SUSTAINABLE MILK PRODUCTION

- The Canadian milk production footprints for carbon, land and water are among the lowest globally:
  - 1.01 kg of CO_2 e per kg of milk
  - 20 litres of water per kg of milk
  - 1.7 m^2 of land used per kg of milk
- Fewer cows are producing more milk = less environmental impact. In 2015, 953,200 cows produced 81,766,876 hL of milk. In 2005, 1,041,400 cows produced 75,556,679 hL of milk.
- Carbon equivalent emissions from dairy farms were reduced by over 25% between 1981 and 2006 as a result of efficiency gains made on farms. This trend has continued to show a steady decline in GHG emissions from dairy farms of approximately 1% per year.
- The socio-economic life cycle analysis of the Canadian dairy sector, based on UNEP/SETAC's guidelines, was completed in 2012. A global dairy first!

DAIRY CATTLE HEALTH, CARE AND WELFARE

- National eradication programs for serious cattle diseases have been developed and several diseases, like brucellosis, have been eradicated from the dairy herd.
- Mastitis research and discoveries are leading to promising new strategies like controlling pathogens and developing a vaccine to manage mastitis infections.
- Research outcomes resulted in science-based standards for the Animal Care Assessment program of DFC's proAction program.
- Canadian milk is among the highest quality milk in the world! Canada has lowered the somatic cell count standard to 400,000 cells per millilitre of milk since 2012.

HUMAN NUTRITION AND HEALTH

- Milk products, regardless of their fat content, do not appear to increase cardiovascular risk. In fact, a growing body of evidence indicates that milk products are associated with a reduced risk of cardiovascular disease.
- Milk products are important for weight management. Evidence to date indicates that an adequate consumption of milk products may be a key factor in preventing obesity.
- Several studies, including meta-analyses, suggest that milk products are associated with a reduction in the risk of metabolic syndrome and type 2 diabetes, important global health and economic burdens.

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