



# Research Highlights 2016 – 2017

Impact of research investments  
on the Canadian dairy sector,  
human health and the economy





## Canadian dairy genetics excellence: domestic and global success

- Canadian dairy genetics are in demand globally - exports of dairy cattle, embryos and semen were valued at over \$155 million in 2016, rising steadily over the last five years.
- Genetic advances have led to a 76% increase in milk production per cow from 1970 to 2016 (5,763 kg compared to 10,512 in 2016).
- Genetic gains have increased substantially across the board since the implementation of genomics in Canada. The combined gain for protein yield during the five years prior to genomics was 11.8 kg, or around 2.4 kg per year. In the past five years with genomics, the combined gain was 24 kg, or 4.8 kg per year. This means that females born in the last 5 years in a herd with average management are expected to have 305-day lactation yields that increase by about 5 kg per year.



## Measuring and improving dairy cattle health and welfare

- A Canadian discovery is driving the development of a new vaccine that can help prevent mastitis in cows, a disease with treatment costs to the industry of \$500 million per year.
- Science-based standards and tools have been developed for the Animal Care module of Dairy Farmers of Canada's proAction program. On-farm assessments will take place on all Canadian dairy farms starting in the fall of 2017 to benchmark dairy cattle welfare practices and serve to continuously improve the care and comfort of cows.
- A Canadian first! The national study of dairy cattle health and management practices will be completed in 2017. It is providing critical information to the sector on the most important diseases on farms that need action and supplying information on how to best prioritize and manage dairy cattle health.



## Canadian dairy farms positioned for sustainability leadership

- An award-winning Canadian scientist and her team has better balanced the formula used to feed dairy cattle. When implemented in dairy rations, estimates are that Canada can cut its nitrogen emissions by 17,000 tonnes a year and Canadian farms will save \$77.5 million annually.
- A new online tool called DairyFarms+ has been developed for Canadian dairy farmers to voluntarily track and improve their farm's carbon footprint, thus providing opportunities for users to continuously improve on-farm efficiency and sustainability.
- Canadian scientists are using genomics to develop an index that can help farmers select animals that are the most efficient at digesting their feed and are lower methane emitters.



## Contributing to positive health outcomes for Canadians

- A comprehensive systematic review by a team of researchers from Laval University assessed all the available scientific evidence on dairy and cardiometabolic outcomes and concluded that there is high quality evidence for the association between consumption of dairy products and reduced risks of cardiovascular disease, type 2 diabetes and hypertension.
- A study led by a team of researchers from the University of Toronto added to the growing body of evidence showing that specific dairy fatty acids are protective for developing type 2 diabetes - a global health burden.
- High level evidence from a team of researchers from Laval University shows that saturated fat from cheese and butter does not negatively impact several important cardiovascular risk factors and may explain why several studies show no adverse effect of regular fat dairy products on the development of cardiovascular disease.
- Researchers from McGill University found that consuming the recommended servings of Milk and Alternatives, as per the recommendations of Canada's Food Guide, was associated with better body weight and bone health in children.

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