



## Dairy Farmers of Ontario Research Priorities

### (1) Dairy Farm Efficiency

- 1.1 Dairy cattle genetic improvement (fertility, productivity, feed efficiency)
- 1.2 Dairy cow reproduction (including alternative tools and practices to reproductive hormones use)
- 1.3 Dairy cattle nutrition
- 1.4 Forage breeding and management for improved yield, resistance, conservation, quality and digestibility
- 1.5 Big data: systematic analysis of trends and associations of data to improve profitability
- 1.6 Workplace biosecurity, safety & mental health: staff, workers and industry partners such as veterinarians
- 1.7 Farm economic performance & impact of trade: risks and opportunities

### (2) Dairy Farm Sustainability

- 2.1 Reduced environmental footprint including GHG (enteric methane), energy, wastes and water
- 2.2 Soil quality and retention
- 2.3 Understanding the role of biodiversity on dairy farms to complement or enhance farm management practices

### (3) Animal Health and Welfare

- 3.1 Strategies to mitigate targeted infectious diseases and new emerging diseases: mastitis, paratuberculosis, salmonellosis, leucosis, bovine viral, diarrhea
- 3.2 Dairy cows' genetic improvement (disease resistance)
- 3.3 Lameness and injuries prevention, management and treatment
- 3.4 Dairy cow transition period related health and welfare issues
- 3.5 Pain mitigation and euthanasia BMPs and science-based decision-making tools
- 3.6 Sustainable barn design for conventional and alternative dairy cattle housing systems (new national/provincial building & electrical codes, social impact)
- 3.7 improve the health and welfare of calves and cows and optimize productivity and longevity by understanding the behavioural, social and economic barriers or incentives to BMP adoption
- 3.8 Understanding the social licence for dairy cattle health and welfare for existing management practices and alternatives.

### (4) Milk Composition, Quality and Safety

- 4.1 Microbiology – better understanding of the impact of microbes on milk and dairy products composition and quality as well as human health
- 4.2 Chemical, physical and biological hazards and indicators (including addressing relevant risk management strategies for hygienic practices in milk and dairy production and processing)
- 4.3 Effect of farm practises (feed, equipment...) on the quality, shelf life and processing of milk
- 4.4 Identify the methods to naturally modulate the composition of milk and improve its quality and value, potentially enabling new dairy product development.
- 4.5 Sustainably reduce the use of antimicrobials while maintaining farm biosecurity, dairy cattle health and welfare.
- 4.6 Development of alternative tools and practices to antimicrobials use and management

### (5) Milk Products and their Components in Human Nutrition and Health