



Novalait

Saskmilk

Joint Call for Research Proposals on Optimizing Milk Composition and On-Farm Utilization of Processing By-products for a Sustainable Dairy Future

Guidelines

Dairy Farmers of Canada (DFC) is a non-profit organization funded by dairy farmers across Canada and representing more than 9,000 dairy farms in the country. DFC plays a leadership role on behalf of the industry in several important areas, including funding and support of research in human nutrition and dairy production. DFC is partnering with Alberta Milk, BC Dairy, Dairy Farmers of Manitoba, Dairy Farmers of Ontario, Novalait and SaskMilk, to launch, within the Canadian scientific community, this Joint Call for Research Proposals.

INTRODUCTION

Milk is composed of water, fat (commonly called butterfat), and solids non-fat (SNF). The SNF portion consists of protein (primarily casein and lactalbumin), carbohydrates (primarily lactose), and minerals (including calcium and phosphorus).¹ Most dairy-producing countries have been facing a growing surplus of SNF², the remaining component after cow's milk is processed and its fat is removed for use in products such as butter and cream.² This surplus represents several economic, environmental, and technological challenges.

Dairy manufacturing generates by-products, which are secondary materials obtained during processing. The development of new on-farm usage of such by-products has the potential to benefit milk production while contributing to sustainability and waste reduction.

Despite higher butterfat production on dairy farms across Canada in 2024³, the surplus of SNF remains a high-priority issue for the Canadian dairy industry. The challenge stems from the fact that:

- Consumers are increasingly choosing fat-rich foods, such as butter and cream.
- There is limited capacity to process other milk solids into dried products.
- The export of skim milk powder and milk protein concentrates has been severely restricted by the Canada-United States-Mexico Agreement (CUSMA).

In an effort to address this challenge, DFC is partnering with Alberta Milk, BC Dairy, Dairy Farmers of Manitoba, Dairy Farmers of Ontario, Novalait and SaskMilk, to launch, within the Canadian scientific community, this Joint Call for Research Proposals on Optimizing Milk Composition and On-Farm Utilization of Processing By-products for a Sustainable Dairy Future. DFC and its partners are seeking innovative, sustainable, and economically feasible solutions that can be applied on dairy farms to help address the economic, environmental, and technological challenges associated with managing milk SNF in Canada.

TARGETED RESEARCH

This Call targets **pre-competitive** research aimed at developing, acquiring, or validating new scientific or technological knowledge to ultimately solve a concrete, generic, and well-identified problem for the benefit of the Canadian dairy sector. **Commercial product research and development is not eligible.**

Please refer to the Appendix at the end of this document for targeted research priorities under this Call.

Projects lasting 1 to 3 years, with an anticipated start date in June 2026, will be considered.

ELIGIBLE APPLICANTS

Researchers from Canadian universities and colleges and/or from federal and provincial research centres are eligible to apply to this Call. Non-Canadian researchers could be considered as collaborators.

The Principal Investigator is responsible for the complete direction of the approved project and other activities associated with its efficient execution. The role of the co-investigator(s) in the project must be clearly defined. Students and trainees are normally not eligible to act as co-investigators.

Partners strongly support a comprehensive and multidisciplinary team approach to effectively addressing the targeted research priorities. Teams are encouraged to integrate new investigators from diverse fields. Additionally, **training of highly qualified personnel (MSc, PhD and Postdocs) is mandatory** in this Call.

SELECTION PROCESS

Submitting a Notification of Intent is the first step in the selection process. Principal Investigators whose proposals are eligible to proceed to the second step will receive the Full Proposal and Budget forms.

STEP 1 – Notification of intent

The submission of a Notification of Intent is the first step in the selection process. This step allows partners to assess proposal eligibility in accordance with the guidelines, select external reviewers, and establish an appropriate expert committee. Eligibility confirmations for the proposals will be communicated to the Principal Investigators during the week of June 2, 2025.

STEP 2 – Full Proposal

The Full Proposals will be evaluated based on their overall presentation, clarity, relevance to the targeted research priorities, added value and differentiation from existing research in the area, scientific merit and technical feasibility, team expertise, training opportunities, potential impact on the dairy sector, and realistic budget. The Full Proposals will be subjected to an independent external peer review process and an evaluation by a scientific expert committee. Final funding decisions will be made by the partners and communicated to the Principal Investigators in December 2025.

Selection or approval of a Full Proposal does not guarantee project funding. Funding will be confirmed only upon the signing of a research agreement.

SPECIFICATIONS FOR NOTIFICATIONS OF INTENT – STEP 1

The Notification of Intent must be submitted on the Notification of Intent Form to dairyresearch@dfc-plc.ca by **May 22, 2025 (11:59 p.m. – local time zone of PI)**. The Form can be found on [the DFC website](#).

Please adhere to the space and format limitations of the Notifications of Intent Form. The font is Arial, with a size of 11 points. **Additional pages will be removed from the Form.**

SPECIFICATIONS FOR FULL PROPOSALS – STEP 2

Upon confirmation of eligibility, DFC will send an invitation to submit a Full Proposal to the Principal Investigators and provide a Full Proposal Form and a Budget Form to be completed and submitted to dairyresearch@dfc-plc.ca by **July 21, 2025 (11:59 p.m. – local time zone of PI)**.

Please adhere to the space and format limitations of the Full Proposal Form. The font is Arial, with a size of 11 points. The body of the Full Proposal Form is self-contained and must not include any additional pages or attachments other than tables and figures. Up to three manuscripts relevant to the proposed project may be appended to the Full Proposal Form.

A complete curriculum vitae (CV) for the Principal Investigator and each co-investigator must be included in the Canadian Common CV format. A co-investigator is a scientist who will contribute to the research and be responsible for one or more objectives of the proposed project. Co-investigators will receive funds to conduct their portion of the research.

Forms submitted in French will be translated for English-speaking reviewers; however, the Principal Investigator and/or their team may not review the translation.

To ensure better coordination and funding efficiency, partners reserve the right to share Full Proposals with other research funders.

BUDGET

The maximum funding request for a project under this Call is up to \$250,000. The total available envelope for this Call is approximately \$1,000,000.

Matching funds: The research teams are strongly encouraged to seek matching funds. Any funds requested or provided from other sources must be clearly detailed in the Budget Form at the Full Proposal step.

Indirect Costs: No indirect costs will be covered for research institutions, principal investigators, and/or co-investigators for projects funded under this Call.

Equipment: No equipment purchases above \$10,000 per piece of equipment, including taxes and shipping, is allowed. Equipment rental is encouraged rather than purchase.

RESEARCH AGREEMENT

Prior to initiation of a project, a multipartite research agreement is entered into by and between the investigators, research institutions and partners. The agreement defines the rights and obligations of the research institutions, the investigators and the partners, including without limitation:

- Investigators and research institutions' responsibilities in the conduct of the project,
- Financial responsibilities of the parties with respect to the project,
- Reports,
- Publications of project results,
- Confidentiality,
- Ownership of intellectual property and other property rights,
- Commercial use of the project results.

In accordance with the provisions of the multipartite research agreement, the research institutions and/or investigators grant partners a licence to use the project results for internal, non-commercial and research purposes; a first option to negotiate an exclusive commercial licence to commercially exploit project results; and a right of first refusal to match any third-party offer to commercialize the project results. In the event where partners are not involved in the commercialization of the project results, partners shall earn a royalty based on the net profits generated by the research institutions from the project results; the percentage of the royalty would be determined prior to commercialization through good faith negotiations based on commercially reasonable terms.

IMPORTANT DATES:

April 24, 2025	Launch of the Joint Call for Research Proposals
May 22, 2025	Notification of Intent submission deadline (11:59 p.m. – local time zone of the Principal Investigator) *
Week of June 2, 2025	Confirmation to Principal Investigators regarding the eligibility of their proposals
July 21, 2025	Full Proposal submission deadline (for eligible proposals) *

**A confirmation of reception will be sent by email within three business days.*

REMINDER - A completed Full Proposal must include:

- The completed Full Proposal Form
 - Digital signatures or scanned copy of the signatures are acceptable.
- The completed Budget Form
- A complete Curriculum Vitae for the principal investigator and each co-investigator, in the Canadian Common CV (CCV) format

All inquiries for additional information pertaining to any of the above points should be directed to dairyresearch@dfc-plc.ca.

References:

¹ <https://www.idfa.org/definition>

² Minister MacAulay launches new program to support the Canadian dairy sector;
<https://www.canada.ca/en/agriculture-agri-food/news/2023/09/minister-macaulay-launches-new-program-to-support-the-canadian-dairy-sector.html>

³ <https://agriculture.canada.ca/en/sector/animal-industry/canadian-dairy-information-centre/statistics-market-information/farm-statistics/milk-production>

APPENDIX

Research Priorities

1. Milk composition management

- **Improving feeding strategies:** Use precision agriculture techniques to tailor feed rations more closely to individual cow needs, enhance milk yield while optimizing the balance of fat, protein, and other components.
- **Breeding for optimized milk composition:** Research genetic improvement strategies for breeding dairy cows that naturally produce milk with an ideal balance of fat and non fat solids, reducing the need for post-production adjustments.
- **Management practices for targeted milk composition:** Investigate how changes in cow management practices (health, milking routines, etc.) can influence milk composition.

2. On-farm utilization/valorization of processing by-products

- **Direct use in animal feed:** Investigate the incorporation of processing by-products, particularly whey into livestock feed formulations, while considering the nutritional needs and health of the animals.
- **Anaerobic digestion for biogas production:** Implement systems that utilize whey and other organic waste for biogas generation, reducing reliance on external energy sources and minimizing waste disposal issues.
- **Nutrient recycling:** Study methods for using processing by-products to enhance soil fertility, such as developing fertilizers from by-products.

N.B. An economic component of costs/benefits and a robust evaluation of any potential impacts on milk properties or quality measures must be included within each proposal.