The benefits of using new, more digestible alfalfa for Quebec's dairy farms

Duration: 2018 – 2021

Highlights

- New, more digestible cultivars of alfalfa available on the market are expected to extend the harvest period and make it less subject to weather-related hazards without significantly impacting the nutritional value of the feed harvested. If this is confirmed, it would be easier, for example, to manage feed mixes.
- In addition, the use of genetically modified alfalfa, which is also more easily digested, is controversial in Quebec. The research team will be able to produce an objective opinion on the performance of this alfalfa in the Quebec context.
- The productivity and nutritional value of these more digestible alfalfa cultivars have never been tested in the field in Quebec's climatic conditions.
- The effects of more digestible alfalfa on performance and the production of enteric methane from dairy cows also call for further study.
- In this context, the general objective of the project is to evaluate the benefits of using more digestible alfalfa on dairy farms in Quebec.

Objectives

The general objective of the project is to evaluate the benefits of using more digestible alfalfa on dairy farms in Quebec. The project consists of three components with the following specific objectives:

1) To evaluate a number of more digestible alfalfa cultivars and populations in Quebec's bioclimatic conditions to compare their yields, nutritional values and persistence.
2) To evaluate the impact of using a more digestible alfalfa cultivar on dairy cow performance.
3) To evaluate the technical and economic impacts of using the alfalfa cultivar on dairy farms in Quebec.

Results and potential benefits

The project is currently underway. Six more digestible alfalfa cultivars/populations, as well as two control groups, will be tested in the field during the 2017–2018–2019 seasons. Cows will consume the more digestible alfalfa in winter 2019. Using the data collected on yield as part of the animal component, the overall impact of using more digestible alfalfa will be calculated based on the net benefit for the farm. This information will allow us to determine whether the practice is profitable in the Quebec context (winter, supply management, feed costs, etc.).

If more digestible alfalfa cultivars prove to be effective at producing more milk with the same amount of feed, it is possible that they could also extend the harvest season without negatively affecting nutritional value, which is a clear benefit for dairy farmers. In addition, the practice will reduce methane production and facilitate feed mix management.

Professionals trained

Master's students:
- **Jean-Philippe Laroche**

Undergraduate research assistants:
- **Héloïse Henry**
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For further information

The research results will be transferable to dairy farmers. An article will be written for the journal *Le Producteur de Lait Québécois*. In addition, a presentation proposal will be submitted to CRAAQ for the Quebec Dairy Cattle Symposium. Other communications activities (articles, training sessions and presentations) are planned for collaborating users, including Novalait and Valacta.

Financial contributions

Special call for proposals in dairy production and processing (2016–2021)

- Natural Sciences and Engineering Research Council of Canada (NSERC)
- Quebec consortium for industrial bioprocess research and innovation (CRIBIQ)
- Novalait

Total budget: $177,996

Contact persons

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