



“Evaluation of alfalfa lines and populations for reduced dormancy, higher yield and winter hardiness across Canada.”

## WINTER HARDY ALFALFA

**PROJECT NO.:** FRG.02.15

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**Background:** Current varieties of winter hardy alfalfa enter into dormancy in late summer and early fall, meaning that growth ceases during that time. While they are grazing tolerant and winter hardy, after the first graze or cut, regrowth does not occur to an extent that permits a second cut or more flexible grazing systems. Higher yielding commercial varieties with faster regrowth often suffer during overwintering, making it difficult to keep a significant portion of alfalfa in the stand for a reasonable length of time.

Dormancy in alfalfa is related to the rate of decline in sunlight and temperature. This project will evaluate different populations of alfalfa across a number of geographic locations: Quebec City, Normandin, Swift Current and Lacombe, to find the plants that best combine superior winter hardiness and higher late season productivity to use in future breeding programs.

This project builds upon a related Beef Industry Science Cluster project, which is genotyping 18 alfalfa varieties and evaluating them for yield, fall dormancy, freezing tolerance and long-term persistence.

**Objectives:** The objectives of this study are to:

1. Improve late season alfalfa productivity for grazing by selecting lines for enhanced fall growth (reduced fall dormancy) and winter hardiness.
2. Identify winter hardy alfalfa populations with variations in fall dormancy.
3. Compare the agronomic performance of short-season alfalfa (e.g. Yellowhead, Peace, Anik, Rangelander) in contrasting environments with differences in temperature and daylight hours.

**Implications of the Research:** This project will provide sources of non-dormant (or reduced dormancy), but winter hardy germplasm for producing new alfalfa varieties with improved late season growth while maintaining winter survivability.

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