

## Can including high protein forages with corn improve winter grazing practices leading to improved beef cattle health and environmental footprint?

**Project Code:** POC.08.18  
**Completed:** *In Progress. Results expected in March 2020.*

### Project Title:

Exploring corn intercropping strategies to increase protein and profitability of beef cattle grazing

### Researchers:

Emma McGeough, PhD and Yvonne Lawley, PhD (University of Manitoba)

### Objectives

To identify new combinations of corn grown with high yielding, high protein forages for improved fall grazing.

### Background

Approximately 68% of producers in Western Canada currently utilize some form of extended winter grazing. These winter grazing practices allow producers to reduce overwintering costs due to lower inputs and labour. Corn grazing is a popular method of winter feeding for a number of reasons including its very high yield per acre compared to cereal crops or forages, high energy content and its potential to provide shelter for cattle. However, corn is low in protein thus supplemental protein is required to maintain cattle performance particularly under cold weather conditions. The ability to graze other high protein forages between the rows of corn provides the opportunity to reduce the need for protein supplementation. This practice may also have the potential to provide high quality feed for classes of cattle whose level of performance may be limited by the low protein content of straight corn such as backgrounding cattle.

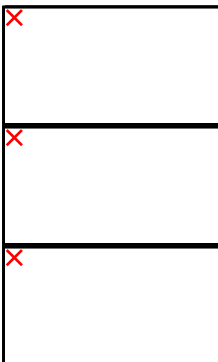
### What they will do

Researchers plan to plant 4 different types of high protein crops between the rows of corn: Italian ryegrass, hairy vetch, radish, and clover. As nitrogen fertilizer is one of the most expensive inputs for corn systems, each of these intercropping combinations will be compared under low and high nitrogen application levels. Researchers will measure crop establishment, forage yield, and quality to determine which forages perform best when grown with corn. They will evaluate the ability of the forages to meet animal requirements during the winter period through the use of diet formulation software.

### Implications

This one year project will identify promising species to intercrop with corn to increase the protein content of grazing corn in Western Canada. Growing high protein forages with corn for grazing may have the potential to further extend the grazing season for a range of cattle classes with high nutrient requirements. By extending the grazing season past research has shown that producers are able to improve efficiency and further reduce the environmental impact of the beef grazing system.

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