



Improving vegetative biomass yield and digestibility in alfalfa for enhanced livestock production.

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Completed: *In Progress. Results expected in March 2022.*

Project Title:

Improving vegetative biomass yield and digestibility in alfalfa for enhanced livestock production.

Researchers:

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Background

Alfalfa is the most extensively grown perennial forage crop in Canada, with an estimated global cropping area of approximately 3.8 million hectares. Improving biomass yield of alfalfa has historically been one of the main objectives of alfalfa breeding programs but enhancement of this trait in recent years has been rather limited.

Objectives

To determine how the down-regulation of several candidate genes improves the vegetative productivity and digestibility of alfalfa

What they will do

Researchers plan to down regulate the genes in alfalfa that causes it to flower which should allow it to stay productive longer and therefore increase total biomass produced. In other plants researchers have shown that increasing the time a plant remains productive has resulted in increased digestibility. They will also look at a gene involved in pectin synthesis, which has been found previously to alter the composition and crosslinking of pectin in plant cell walls and improve the extractability of cell wall sugars in other plant species. Researchers are hopeful they will see the same digestibility increase in alfalfa.

Implications

This project will be pivotal for designing forage cultivars with increased biomass and enhanced digestibility, which would lead to considerable improvements in energy-use efficiency, and hence profitability, for the forage and beef livestock sectors.

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