

# Agriculture Research and Development

## Nutritional Assessment of Tannin and Zero-Tannin Faba Bean (*Vicia faba L.*) as an Annual Legume in a Livestock Feed Rotation

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### Project Objectives

#### Field Scale

- Evaluate the efficacy of faba bean as an annual legume in a rotation with cereal grains and oil seeds.
- Determine the optimum harvest time for Newfoundland and Labrador conditions

#### Plot Scale

- Compare the nutritional quality of tannin and zero-tannin varieties of faba bean. Snow drop faba bean (zero-tannin) will be compared against Florent (tannin) through measuring nutritional quality.

### Background

There is currently a demand from the livestock industry for an annual legume crop that is both high yielding and of high nutritional quality. Faba beans are an annual legume that grow ideally in cool wet conditions. Like other legume crops faba beans form relationships with rhizobia bacteria that are able to fix atmospheric nitrogen. Zero-tannin faba bean can be consumed by both animals and humans, however tannin containing faba bean can only be fed to ruminants as they can inhibit nutrient uptake. It is possible to feed zero-tannin beans to livestock and poultry provided it is cracked or crushed. Faba bean also provides high quality silage when harvested as a whole plant. The rapid development of a canopy makes faba bean a competitor against aggressive weed populations.





## Technical Details

A strip plot trial of tannin (Florent) and zero-tannin (Snow drop) faba beans was planted at Western Agriculture Centre: Agriculture Research Station in Pynn's Brook, using a seeding rate of 290 lbs/acre and supplemented with the appropriate fertilizer at seeding based on soil test requirements. Samples will be harvested weekly starting week nine and ending on week 16 to be sent for nutritional analysis. Quality and yield will be assessed and compared for both varieties. Optimum harvest dates and tannin vs. zero-tannin nutrition will be determined.

incorporated into rotations, faba beans have the potential to improve soil health, interrupt pest pressures and reduce inputs in future years. Faba bean could potentially reduce farm costs annually in terms of purchased feed and agriculture materials.

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## Agriculture Industry Benefits

Faba bean is a promising legume rotation crop that has potential to serve as a high-quality feed that can boost yields of following crops. Faba beans produce large volumes of biomass that is of a high nutritional quality. When

