

# Potential of Fenugreek as Forage for Dairy Cattle

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Fenugreek (*Trigonella foenum-graecum*) is an annual legume originating from the Indian subcontinent and Mediterranean regions. Fenugreek is traditionally used as a spice or dye and can be used in the derivation of artificial flavours. It is now being studied for potential nutraceutical qualities, some of which could be applicable to dairy cows with benefits to herd health.

Forage-type fenugreek cultivars have been developed at the Agriculture and Agri-Food Canada research station in Lethbridge and the University of Saskatchewan. Benefits of fenugreek include: high protein levels throughout the growing season, indeterminate growth allowing greater flexibility of harvest, and nitrogen fixation in the soil. Research in Lethbridge found that one cut of fenugreek was equivalent in dry matter to two cuts of alfalfa. Initial studies in Southern Alberta have indicated that fenugreek silage has a similar nutrient composition to alfalfa silage and superior digestibility, which could reduce the cost of protein supplementation.

We undertook a study to evaluate the growth potential and nutrient value of fenugreek grown in the Edmonton region. Two varieties of fenugreek, CDC Quatro and AAFC F70, were grown at the Edmonton Research Station in the summer of 2006. Small test plots were grown to determine growth characteristics of fenugreek. Five acres of each variety were grown for haylage production. The haylage will be fed to lactating cows to determine its digestibility, and to evaluate the effects on rumen fermentation, feed intake and milk production. In the summer of 2007, three types of fenugreek, CDC Quatro, AAFC F70, and AAFC Tri-Star, will be grown in test plots to assess growth characteristics. Fenugreek will also be grown in mixes with cereals commonly used for silage. A long-term lactation study will also be conducted.

**Implications:** The research on fenugreek in North Central Alberta is just in its infancy. If we find that fenugreek is equal or superior to alfalfa as forage for lactating dairy cows, then producers will have another forage crop that they can feed to their cows and use in their crop rotations.