

# BCRC BEEF SCIENCE CLUSTER

# RESEARCH

# Facts

IN PROGRESS

## How does forage finishing affect product quality? FRG.04.09

**Project Title:** Effect of Method of Forage Finishing and Cattle Breed on Growth Performance, Carcass Characteristics, Eating Quality, and Nutrient Composition of Forage Finished Beef Relative to a Grain Finished Product

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**Background:** In Canada, most youthful cattle are finished at under 20 months of age on a high grain diet. Forages generally contain less energy than grain, and Canada's relatively short growing season means that forage-finished cattle require stored forage in addition to pasture. However, forage-fed beef contains more omega-3 fatty acids and may contain more conjugated linoleic acid (CLA) than grain-fed beef. This has sparked interest among some health conscious consumers, but there is a need to ensure that omega-3 fatty acid and CLA levels can consistently meet labeling requirements for the health conscious consumer. Oxidation of unsaturated fats in forage finished beef may negatively impact flavor and odor. This has led to concerns that some forage finishing methods may yield a premium-priced product that doesn't deliver on the perceived quality or potential health benefits to the consumer. This study will provide comprehensive information on the use of conserved forages for meeting consumer demands in a forage-finished beef niche market.

**Objective:** Determine the effects of forage finishing method (pasture, hay, silage) on performance, carcass traits, eating quality and nutrient composition of beef relative to grain-finished beef.

In each of two years, 55 yearling Angus and 55 yearling Hereford steers will be fed at the AAFC Kapuskasing and University of Guelph's New Liskeard research stations. Cattle will be finished on pasture, hay, silage, or a whole-shelled corn based diet. Cattle will be fed for approximately 120 days and then shipped to a commercial abattoir. Standard growth and carcass measurements will be obtained for all cattle. Diet effects on carcass composition and fatty acid content will be determined. The ribeye and eye of the round will be analyzed for lean color, pH, shear force, and cooking loss. Trained taste and consumer panels will assess tenderness, juiciness, and flavour. A shelf life study will measure lipid oxidation. Muscle samples will also be analyzed for fatty acid and vitamin analyses.

**Implications:** This research will determine the degree to which finishing methods affect fatty acid and vitamin composition of beef.

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