

Pasture-based livestock production has the potential to produce healthier meat and dairy products while simultaneously providing the environmental benefits associated with perennial pastures. The proposed project focuses on grass-fed beef and dairy production. According to Manitoba's Grass-Fed Beef Association, grass-fed beef is defined as beef that has been fed only forages from weaning to slaughter. Maintaining perennial pastures are an integral component of grass-fed beef and dairy production. With proper grazing management, perennial pastures can provide habitat for grassland birds and pollinators, water filtration, erosion protection, and runoff management. There is thus significant interest in exploring production options that provide a fully forage-based diet for cattle while maintaining economic viability on the farm. Discussions with two producers located in Manitoba indicated that having adequate forage for grazing during the mid-summer and early fall is a common production challenge. Based on these initial discussions, two main project components were developed. The first is the completion of farm case studies to expand on these initial discussions and the second is a grazing trial to study alternative forages.

The case studies will document the forage availability and grazing management used on selected pasture-based operations. There will be six case study farms; three are grass-fed beef farms located in Manitoba and three are pasture-based dairies located in Ontario. There is limited knowledge of pasture-based dairies located in Manitoba and therefore Ontario was selected as an alternative location. The case studies are observational with the goal of documenting the farming systems used. The information obtained will be used to identify similarities between operations and common challenges and can be used to help guide where further research would be beneficial.

The second project objective is to complete a grazing trial to test annuals for their grazing value during the mid-summer and early fall. Grazing annuals could provide needed rest for perennial pastures as well as opportunities for crop-livestock integration. The species to be studied for the mid-summer are oat, corn, millet, sorghum-sudangrass, winter triticale, and annual ryegrass. The species to be studied for the early fall are Italian ryegrass, winter triticale, red clover, and chicory. The species were selected for their ability to tolerate either warm or cold temperatures and for their high nutritional value. The species will be grown in plots in a randomized complete block experiment and will be grazed by sheep. The sheep provide a manageable research alternative to cattle while still allowing plant response to actual grazing to be studied. The forage quality and forage utilization of each plot will be determined.

The information from the case studies will be beneficial to guide where further research on pasture-based livestock systems could be of value. The grazing trial will determine the value of grazing selected annuals during the critical periods identified by farmers. The overall project goal is to address some of the challenges faced by pasture-based livestock producers. Improving the economics of pasture-based production can help reduce the loss of pastures and therefore maintain the environmental benefits provided by perennial pastures.