

The Role of Forages

IN SUSTAINABLE BEEF PRODUCTION

PROJECT TITLE Developing a Strategy for Forage and Grassland Management through an Examination of the Multi-Functionality of Forages in Terms of Productivity and Environmental Sustainability (8.43)



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Background

Forages and grassland have always been a critical resource for beef production in Canada. Traditionally, the main competing use for forage and grassland has been crop production for human and livestock feed. High grain and oilseed prices encourage farmers to convert forage and grassland to crop production. The increased use of grain-based ethanol and biodiesel for vehicles is also contributing to increases in the worldwide demand and price of grains and oilseeds.

Converting grassland to grain and oilseed production fails to consider the inherent ecological and broader economic benefits of forage production. There is a growing recognition that forages and grasslands play an important role in environmental sustainability (by naturally promoting carbon sequestration, animal and plant biodiversity, reduced soil erosion, improved water management, etc.) along with other potential benefits (agricultural diversification, agri-tourism and grass-fed beef production).

The relative economic and societal benefits of these alternative land uses have not been clearly determined. It is important to collect this information in Canada. For

example, methane production and carbon sequestration collected from breeds, feeds, plant species and climates elsewhere in the world may not accurately describe what happens in Canada. This makes it difficult for Canada to develop sound public or industry land use policy.

These issues are particularly relevant for Manitoba's beef industry because it is heavily dependent on forage-based cow-calf and backgrounding production.



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Objectives

To accurately assess how Manitoba's forage and grasslands are currently being used, and to calculate the cost:benefit ratio of forage and grasslands in terms of:

- greenhouse gases (e.g. carbon sequestration and greenhouse gas emissions),
- plant and wildlife biodiversity,
- water (quality and water use efficiency),
- soil (manure nutrients, susceptibility to water and wind erosion) and
- agricultural diversification.

These researchers are actively collecting manure nutrient and greenhouse gas production and sequestration data in a range of Manitoba cow-calf and backgrounding systems. They are also working with organizations including Manitoba Crop Insurance, Ducks Unlimited, Delta Waterfowl, Manitoba Heritage Habitat Corporation, Manitoba Agriculture Food and Rural Initiatives, and the Agri-Environment Services Branch (formerly PFRA) to gather relevant information about how current land use practices impact Manitoba's water, soil, biodiversity, and rural economy. This information will be used to estimate the cost:benefit ratio of forage and grasslands for agriculture and society. These models will also be used to predict how changes in land use practices will impact environmental and economic considerations for producers and the public.

Implications

This research will enable industry and public policy makers to:

- fully understand the value of forages and grasslands,
- make more informed land use policies, recommendations and decisions and
- ensure the long-term sustainability of forage-based beef production in Canada.

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