



Increasing Pasture Production Fact Sheet 2015

LOCATION: FIRST STREET PASTURE

START DATE: JUNE 2015

STATUS: IN PROGRESS

Low cost management techniques to improve pasture production

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Background

The First Street Pasture is made up of 403 acres of pastureland that has inherently poor productivity due to sandy soils. Historically this pasture was grazed as a single unit with one water source in the southwest corner. The distance to water has caused overgrazing near the water source and it is underutilized at the farthest reaches. This land is also infested with leafy spurge which is densest near the original water source. Leafy spurge has an inverse relationship with forage production, as it increases in density and spreads throughout the pasture it decreases forage production. The First Street Pasture has qualities similar to a lot of pasture land in Manitoba. This project will look at low cost infrastructure and management changes to see if they can improve the production on this type of land.

Objectives

- ➔ To increase production through implementing low cost changes to management and infrastructure through:
 - Rotational grazing using single strand electric fence, no gates and shallow buried water lines.
 - Introduction of legumes
 - Reduction in leafy spurge
- ➔ To determine if production increases are enough to offset the extra costs of the added infrastructure and labor through an economic analysis.



Boards used as gate lifters to send cattle between pastures on the First Street Site.



One of the First Street pastures clearly showing signs of leafy spurge growth around grazed sites.

Landscape Type	Baseline Yield (lbs/ac)
Dry upland and no bale sites	1202
Moist lower depression	3937
Previous bale grazing site	1426

Soil quality	Average baseline value
Nitrogen (lbs/acre)	10
Phosphorus (ppm)	6
Potassium (ppm)	196
Organic matter (%)	3.8
pH	7.3

Project Design and Methods

Fifty cow-calf pairs were rotationally grazed starting June 13 at an average distribution of 8 acres per head. The herd passed through most pastures twice during the grazing season. The cattle were weighed on entry, 40 days on pasture and 81 days on pasture.

The pasture was divided into 10 paddocks using single strand electric wire. Shallow buried water lines were installed to service the paddocks with five spigots, quick couplers and movable troughs. A limited number of gates were installed to reduce the cost of the fencing. Cattle were trained to go under the wire of the fence by coaxing them with feed and herding them toward the uplifted portion of the fence.

Soil tests and forage yields were taken in the paddocks and across different types of land: upland, lowland, bale feeding sites and non-bale feeding sites. Thirty grazing cages were set up throughout the pastures to collect yield data.

What did we find?

After the initial training period it was relatively easy to move the cattle under the electric wire. This method of not using gates saves on hardware costs and reduces the number of connections to power. However, lack of gates did make travel on quad or truck more cumbersome and required two staff to travel together when using the truck.

The soil tests indicated that the nitrogen and phosphorus were generally very deficient and the potassium was in the medium to high range. These levels likely account for the poor forage growth on the site. The lower areas in the fields collected more moisture and therefore yielded better forage growth, however the majority of the acres on First Street are higher and drier.

The cows did best in the first 40 days on pasture (ADG = 2.1 lbs/day); during the second half of the grazing season, many of them were losing weight or just maintaining their body weight (ADG = 0.83 lbs/day). This may be caused by declining forage quality, insect pressure and/or increasing demands by the calf. The calves had about the same daily gain throughout the season (ADG = 2.27 lbs/day).

Key Messages

It is important to keep in mind that this was the first year of a long-term study so only baseline values were collected. In this first year it was established that the First Street site has poor forage productivity due to poor soil fertility and texture. Cattle performed adequately but the grazing season was shorter than expected due to an overestimation of forage production, poor forage regrowth and standing old growth. The cattle quickly learned how to move under the electric wire making gates unnecessary. Improving soil fertility and reducing leafy spurge density are goals of this project and will be addressed in years 2 and 3 of the project. An economic analysis is also planned once further years of data are collected.

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