RAIN Research Note 220616

2015 Pasture Improvement Results: Spanish River Carbonatite

Spanish River Carbonatite (SRC) is mined from a mineral deposit and is used as a soil amendment.

When applied at 1100 kg/ha, SRC did not affect soil pH or nutrient content. It had no impact on forage yields, and cattle did not favour or avoid areas treated with SRC. It also did not affect the mineral content of forages grown in treated fields.

Thanks go to our farmer co-operators Alex & Helen McRae, and Jim & Bette Withers for their assistance with this project.

For more information on this project, please contact:

Christine O'Reilly
Research Technician
Email: coreilly@ssmic.com
Phone: 705-942-7927 x3147

www.rainalgoma.ca

Boreal Agrominerals Inc. owns the Spanish River Carbonatite (SRC) deposit. SRC is marketed as a soil amendment. It contains 50% calcium carbonite, 25% biotite, 12% apatite, and 13% trace minerals. It is also used as a liming agent.

SRC contains following amounts of trace elements:

Manganese (Mn)	1 200 ppm
Zinc (Zn)	60 ppm
Copper (Cu)	10 ppm
Cobalt (Co)	10 ppm
Molybdenum (Mo)	12 ppm
Boron (B)	40 ppm

Two farm sites were used in this trial. Treatments were SRC applied at a rate of 1100 kg/ha and a control, where no fertilizers or soil amendments were applied. There were 5 replicates per farm. Soil and forage samples were taken during the growing season for analysis. Cobalt was not part of the standard analysis packages and therefore was not included. Molybdenum was not a part of the soil analysis package.

Results

The soil tests indicated liming requirements between 3 and 10 t/ha; it is unsurprising that 1.1 t/ha did not affect soil pH. At the rate applied, SRC had no statistically significant effect on soil phosphorus, potassium, sulphur, Mn, Zn, Cu, or B. It did not affect forage yields at any pre-grazing sampling time or when sampling times were pooled. It did not influence cattle grazing patterns; post-grazing residuals in all paddocks were not significantly different. It also had no effect on the trace mineral levels of the forage grown in areas treated with SRC.

RAIN Research Note 060716

2015 Pasture Improvement Results: Grazing Management

Rotationally grazed paddocks had significantly higher dry matter yields than continuously grazed paddocks.

Grazing management had no effect on soil nutrient status or forage mineral content, except for soil P content.

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RURAL AGRI-INNOVATION NETWORK

Method

Two farms were set up with five paddocks each: one paddock per farm was continuously grazed; the other four were managed under rotational grazing. Forage samples were taken for nutrient analysis from the cattle farm on June 18 and the mixed livestock farm on October 5. Yield measurements at the cattle farm were done on June 18 and August 14 before cattle were turned out into the rotationally grazed paddocks. Those paddocks were sampled again when the cattle came out.

Results

Overall, rotationally grazed paddocks had significantly higher dry matter yields than continuously grazed paddocks (Figure 1).

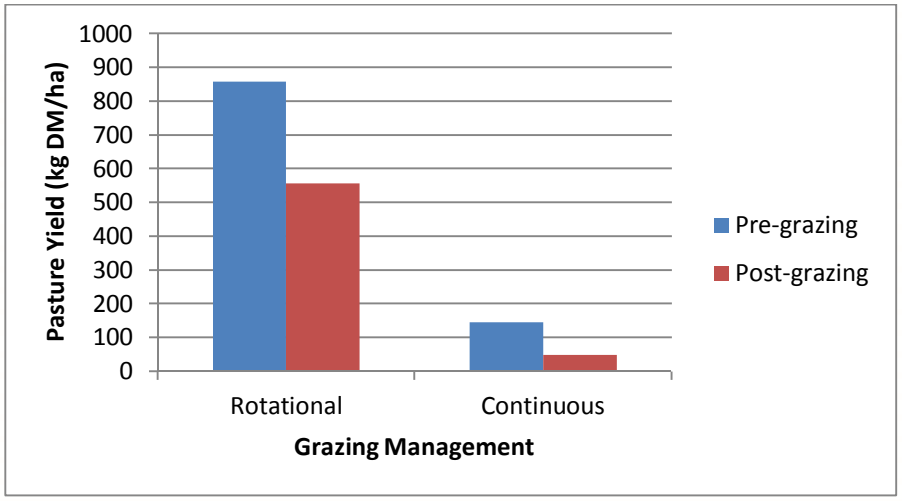

Figure 1. Mean pasture yields under different management systems before and after grazing events

Grazing management (either rotational or continuous) had no effect on soil organic matter, potassium, or sulphur. The analysis indicated that rotationally grazed paddocks had significantly higher phosphorus than continuously grazed paddocks. The reason for this is unknown and could be due to normal variability in a limited number of samples.

Grazing management system also had no effect on forage phosphorus, potassium, and sulphur contents.