Program: Impact of Cattle Grazing Management on Microbial Indicators of Fecal Pollution

P.H. Sharpe, A. Unc, J. P. Del Cid, M. Goss, A. Straathof, R. Marcelissen

In Partnership With
Rideau Valley Conservation Authority

Objective:

The objective of this study was to determine the effect of a water trough in the paddock on the frequency and locations of drinking and defecation.

Measured Parameters in the study:

Sampled water for:
1) pH
2) Electrical conductivity (µS cm⁻¹)
3) Water Temperature (°C)
4) TSS (ppm)
5) Redox potential (mV)
6) Depth of water
7) Flow (m³ min⁻¹)

Environmental parameters:
Air temperature, precipitation, solar radiation

Conclusion:

Major increases in concentrations are associated with rains and thus likely runoff events.

Concentration changes during dry periods (or low intensity rains) are associated with changes in the water chemistry likely driven by temperature kinetics.

Thus both input from grazing animals and changes in microbial numbers driven by changes in the properties of the creek water environment affect the numbers [may increase] of microbial contaminant indicators.

C. Perfringens seems to be mostly dependent on environmental parameters

Support Appreciated from:
Ontario Ministry of Agriculture, Food and Rural Affairs

Community Benefits Include: Improve livestock management, less surface water pollution