



Considerations for Planning and Data Collection of Clubroot Sampling Programs on Large Scale Midstream Projects

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Outline

1. Introduction and Objective
2. Trace Clubroot Experience
3. Biosecurity Commitments and Purpose
4. Health and Safety Planning
5. Sampling Program
6. Field Execution
7. QA/QC
8. Learnings
9. Questions

Introduction and Objective

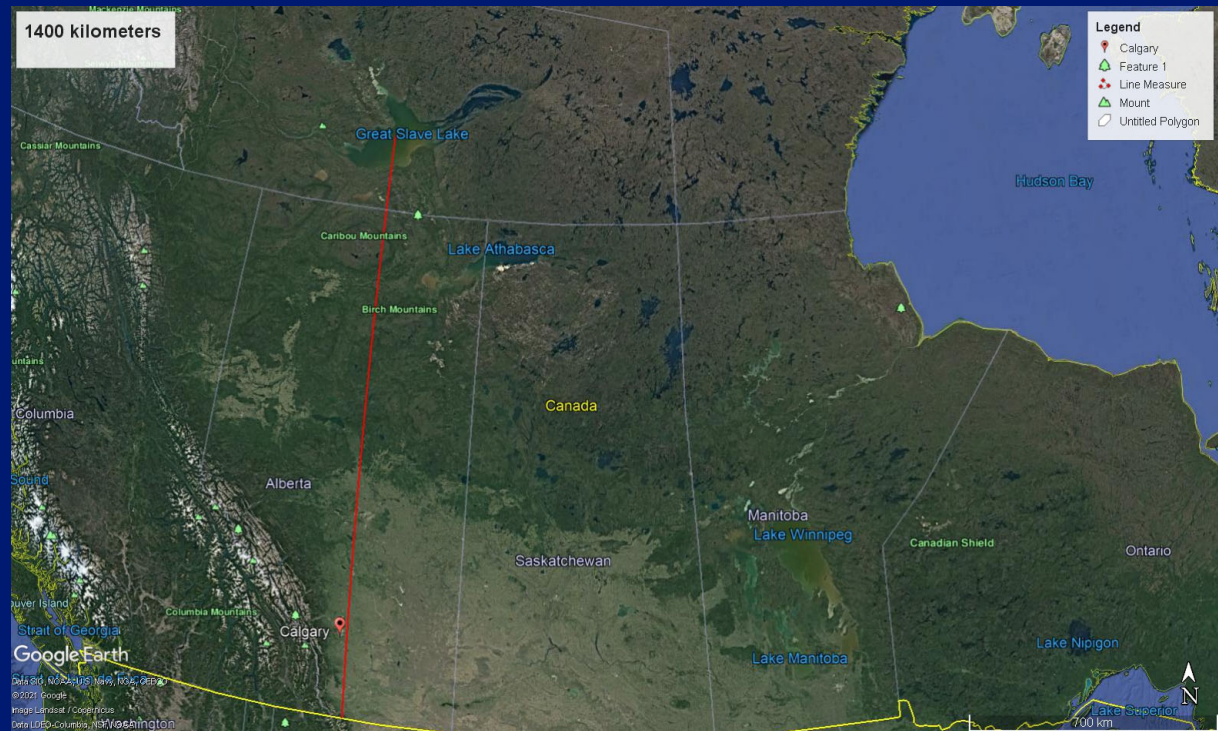
- Clubroot: disease that commonly affects canola
- Important to know where clubroot is to mitigate contamination
- Planning and executing large-scale sampling program



Courtesy of: <https://www.gov.mb.ca/agriculture/crops/plant-diseases/print-clubroot-of-canola.html>

Trace Clubroot Experience

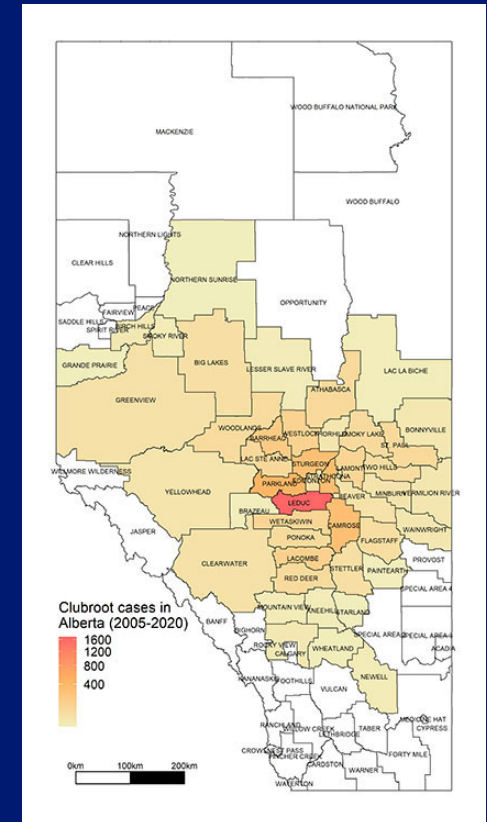
- 6 years experience on large-scale clubroot sampling projects
- Collected >125,000 samples
- Walked >1,400 kilometres of rights-of-way



Aerial image courtesy of Google Earth

Biosecurity Commitments and Purpose

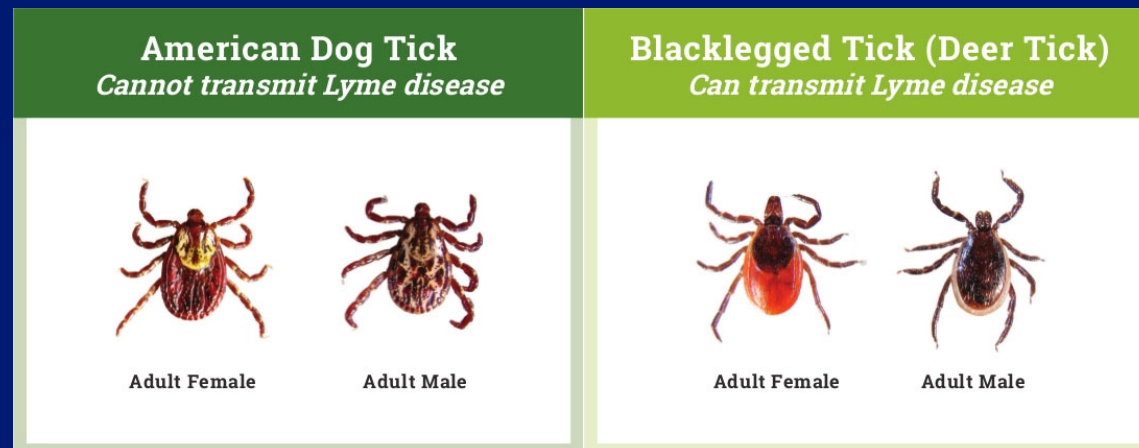
- Purpose: Pre-construction planning
- Commitments:
 - ❑ Legislative/regulatory
 - ❑ Municipal districts
 - ❑ Land types and uses
 - ❑ Landowners



Courtesy of: <https://www.alberta.ca/cumulative-clubroot-infestations-in-alberta.aspx>

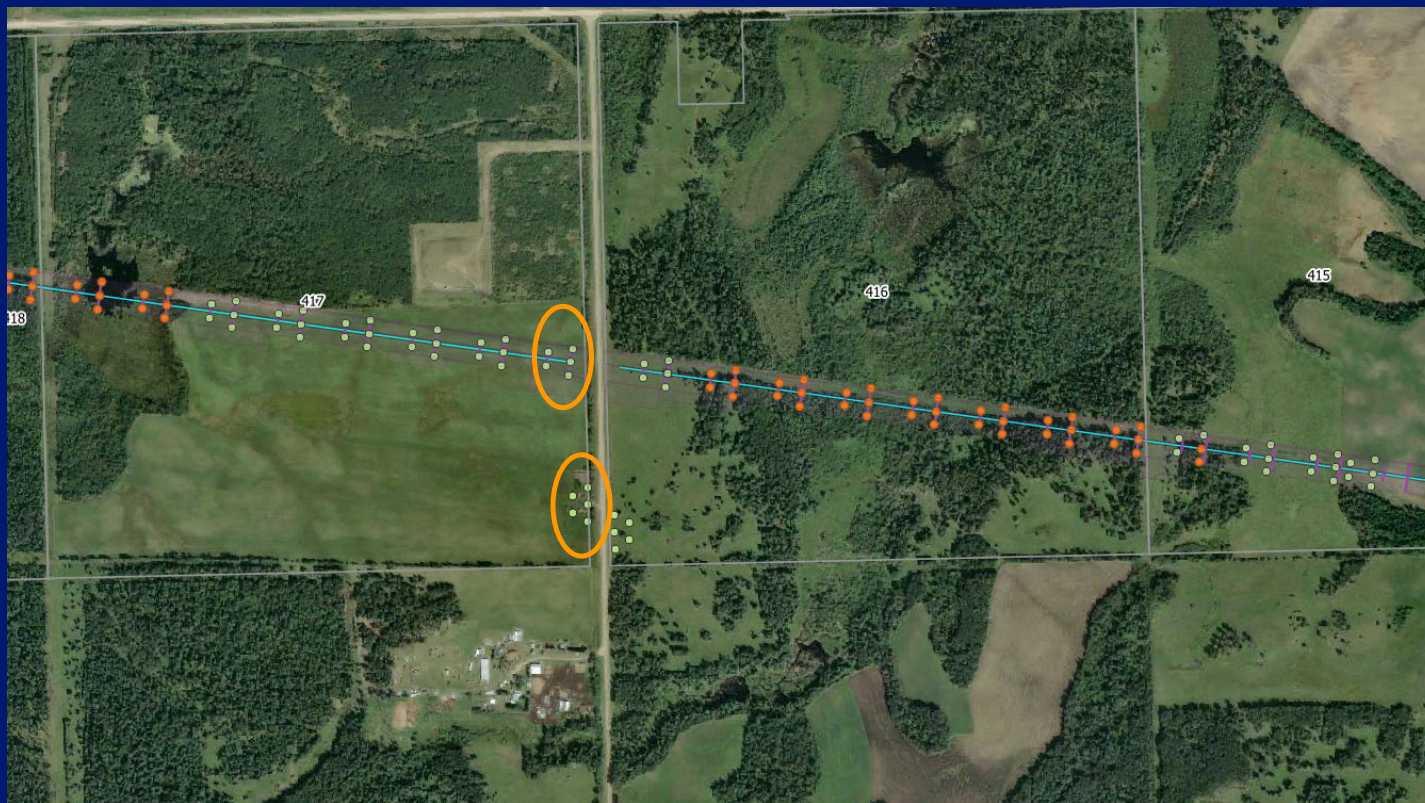
Health and Safety Planning

- Accommodations
- Hospitals
- Internal/client kickoff
- Fatigue management
- Wildlife
- Ticks



Courtesy of: <https://globalnews.ca/news/6889090/ticks-precautions-lyme-disease/>

Sampling Program Design



Sampling Program - GIS

- Prescribed sample locations
- Accuracy can vary with client and/or project



Tree Planter or Clubroot Sampler?

PPE (vest, hard hat, safety glasses)

Tree Planting Shovel



Tree planting bags
(with snacks,
bug spray, and
plenty of water)

Trimble GeoXT

Land Access and Timing



Cleaning Time

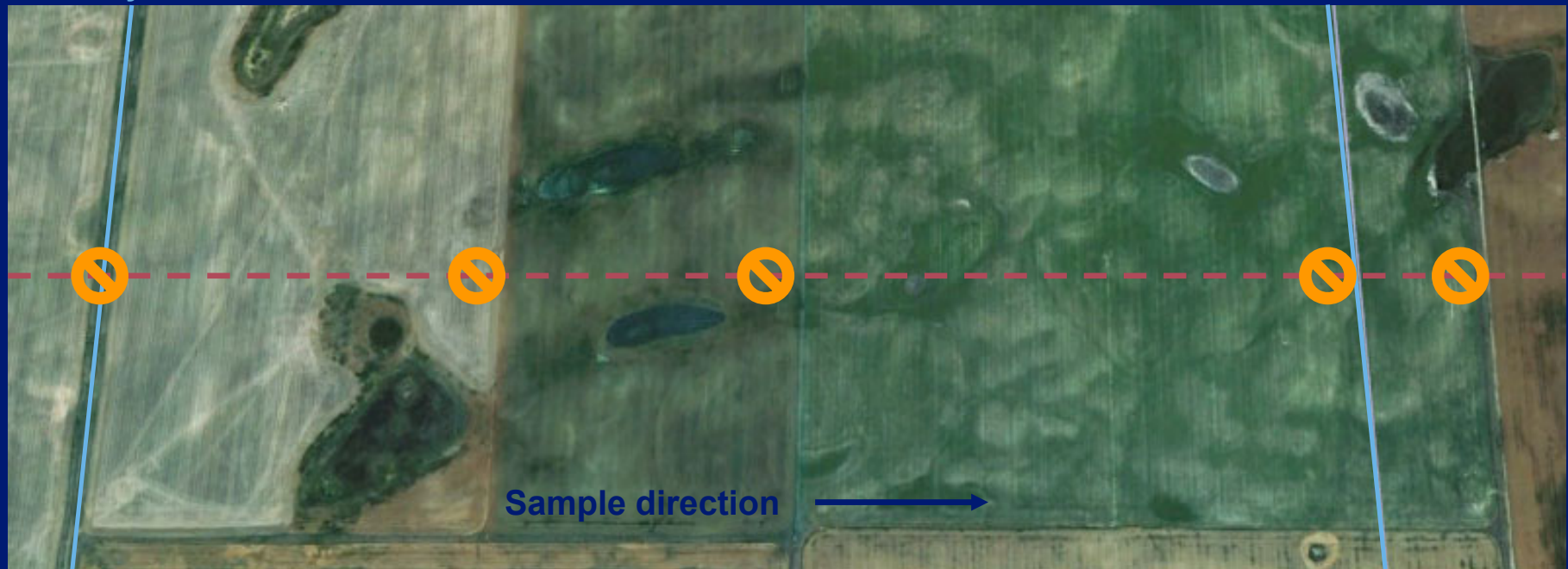
Municipal
boundary

Change in
crop type

Change in
land use

Provincial
border

New
landowner



Aerial image courtesy of Google Earth

Team



Analytical Methods and Reporting

- Qualitative
 - Results simply stated as detectable or non-detect
- Quantitative
 - Various levels depending on spore concentration

Non-Detect

- No spores detected

Possibly

- Spores detected, but not enough to measure

Detectable

- Spores measured above analytical detection limits (1,000 spores/μg)

QA/QC

- Sample Bag
- Daily samples
- GIS
- Biosecurity



Learnings

- Trimbles
- Land access
- Team
- Preparation and planning



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Questions

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