

Call for Producer Participation in a Research Project on Bovine Anaplasmosis

What is Bovine Anaplasmosis?

A production-limiting disease caused by the blood-borne bacterium *Anaplasma marginale*.

Causes anemia, fever, reduced weight gain, decreased lactation and calving success, spontaneous abortions, and death.

Spread by blood-contaminated equipment and tools, re-use of needles, ticks, and biting flies.



Between 1968 to 2000, Canada had at least **one outbreak every decade**.

Since 2008, the number of anaplasmosis cases in Canadian cattle herds has **increased**.



Sources of infection are often unknown. Multiple cases over the last decade suggests that **anaplasmosis may become established** in some regions of Canada.

Economic Impacts & Disease Control

The economic cost of anaplasmosis is estimated at \$660 USD per animal (2021).

Vaccines are not available to prevent disease and antibiotics do not eliminate infection.

Risks of disease include importation of infected animals, husbandry practices, difficulty identifying infected animals, and tick or biting fly presence.

Project Goals

1. Determine the occurrence of anaplasmosis within beef cattle herds in western Canada.
2. Survey herd management practices that may affect the risk of anaplasmosis.
3. Develop a chute-side test that can detect infected cattle quickly.



What we will do

1. Test beef cattle herds, ticks and flies for *Anaplasma*.
2. Conduct an online survey to document current cattle husbandry practices.
3. Use cattle blood to develop a test that detects *Anaplasma marginale*, but not bacteria that don't cause anaplasmosis.



Project Outcomes

Current representation of risk factors for bovine anaplasmosis, including where anaplasmosis occurs & animal management practices.



Quick and simple diagnostic tool to detect animals infected with *A. marginale*.



Development of practical and appropriate methods for preventing the introduction and spread of anaplasmosis in beef cattle herds. Quick and effective response to infections for improved animal health and welfare.

How can you get involved?

- 1 Allow us to collect blood samples from your cattle through your veterinarian.
- 2 Grant us permission to access pastures to collect ticks and horseflies.
- 3 Complete a questionnaire on cattle management practices.

** Please see Page 2 for further details regarding participation

For more information or to volunteer, please contact
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Information for Veterinarians and Cattle owners for Participation this Research Project

How we are testing for bovine anaplasmosis

- Veterinarian will collect 2 tubes of blood and ship them to the research lab.
- We will test the blood (serum) from all cattle for antibodies that react to *Anaplasma marginale* using a competitive ELISA.
- This is the test used by many diagnostic labs use for the initial screening of cattle. It indicates likely exposure to *A. marginale* within the last several months.
- We will also test the blood cells from all cattle for the presence of *A. marginale* DNA using a PCR test developed for research. This is a different test than the one used for confirmation by diagnostic labs.
- Any positive sample will undergo DNA sequencing to confirm that the organism being detected is *A. marginale*.

Regulatory status of bovine anaplasmosis:

- All suspect cases of anaplasmosis are to be reported to the provincial Chief Veterinary Officer.
- Bovine anaplasmosis is an “Immediately Notifiable” disease nationally.
- This means that provincial Chief Veterinary Officers report the occurrence of this disease to the Canadian Food Inspection Agency for tracking and reporting purposes.
- The purpose of a notifiable disease is to monitor infections and disease occurrences and its spread, and to avoid trade barriers.

What happens if we detect *Anaplasma marginale* in a blood sample?

- For any blood sample that is positive for *Anaplasma marginale* (by PCR and DNA sequencing), we will inform the veterinarian that took the blood samples. They should notify the cattle owners and discuss the relevance of these results.
- We will also inform the Chief Veterinary Officer for your province within 24 hours of detection.
- A Veterinary Public Health Epidemiologist for the Province of Manitoba is a partner on this research project. Therefore, the office of the Chief Veterinary Officer will be aware of all test results.

Impact of a positive test on cattle owners.

- Following the report of an *Anaplasma* infection, the Chief Veterinary Officer does not typically mandate disease control, but may offer information and access to diagnostic services to support owners of affected herds and prevent the spread of the disease to other herds.