

Bovine Anaplasmosis



Bovine anaplasmosis is a bacterial disease that attacks the red blood cells of cattle, but has no impact on human health or food safety.

In 2014, bovine anaplasmosis became a federally immediately notifiable disease, following a change at the Canadian Food Inspection Agency (CFIA). As a result, the federal government is no longer involved in controlling the disease. Import testing requirements have been removed, and cows purchased from infected areas of North America are no longer tested before entering Canada. The current approach to managing bovine anaplasmosis in Manitoba is a collaboration between Manitoba Agriculture and Resource Development and the Manitoba Beef Producers (MBP), supported by motions made by the MBP board of directors in 2017.

Cause of Bovine Anaplasmosis

Anaplasmosis primarily causes disease in cattle, however other domestic and wild ruminants can be infected. The bacteria (*Anaplasmosis marginale*) lives in red blood cells. It is spread when blood is exchanged between animals (e.g., bites from an infected tick or other pest), or through human-caused contamination, such as using the same needle on more than one animal, or not properly cleaning equipment that would come into contact with blood (e.g., taggers).

In Manitoba, wood ticks most commonly spread anaplasmosis. Large biting insects, such as horseflies, may also transfer the bacteria on their mouthparts from one animal to another, but do not actually carry the disease itself.

The use of blood-contaminated equipment – such as needles, ear taggers, tattooing instruments, dehorning equipment and castration equipment – is also a significant risk that can spread anaplasmosis within a herd.

Signs and Symptoms

Anaplasmosis destroys red blood cells in the animal, causing anemia. Affected animals appear weak, pale, and jaundiced, with a high fever. Less specific signs include poor appetite and a sudden, severe drop in milk production.

The age of the animal can affect the severity of symptoms. Animals under one year of age rarely exhibit clinical signs, but can develop the infection. Between the ages of one and two years, animals develop moderate to severe clinical signs. Older animals develop severe disease that is often fatal. Survivors may remain carriers for life and act as reservoirs of the bacteria for future infections.

Carrier animals are important because they increase the risk of other animals becoming infected, but do not seem sick. Carrier animals pose no health threat to humans and can enter the food chain, so they can be shipped direct to slaughter. A healthy-looking carrier animal, that is sold as breeding stock, can cause the disease to spread to previously uninfected herds. Carrier animals cannot be treated to eliminate the disease and will remain infected for life.

Anaplasmosis Sample Submission

In a suspect case, have your herd veterinarian examine your cattle and submit appropriate samples, such as an EDTA-tube blood sample, to Veterinary Diagnostic Services to confirm a positive diagnosis.

If positive animals are identified in your herd, you should work with your herd veterinarian to develop a herd health plan to manage this disease. It is recommended that infected animals should not be sold as replacement animals, to protect the health of the broader industry. The Office of the Chief Veterinary Officer is available to provide technical advice and may provide assistance with initial diagnostics, if required.

Prevention of Bovine Anaplasmosis

Producers are encouraged to discuss anaplasmosis and prevention with their herd veterinarian, which might include:

- limiting animal exposure to infected ticks with the routine use of a tick prevention product, ensuring withdrawal times are followed for any treated animals destined for slaughter
- controlling the tick population through pasture management, such as adequate fencing, to keep out ticks' wildlife hosts and removal of brush and long grass
- limiting human-caused introduction and spread of the disease through effective biosecurity

Effective biosecurity measures include:

- testing new animals for anaplasmosis prior to introduction to your herd, particularly if they are coming from states or areas of the province where the disease has occurred before, ask about the herd's health history before purchase
- cleaning and disinfecting blood-contaminated tools and equipment between individual animals to limit spread within a herd, including dehorning tools, castration equipment, ear taggers and tattooing instruments
- reducing risk of transmission within the herd by using only single-use needles and examination gloves during pregnancy-checking for each animal

Anaplasmosis Treatment

Treatment may be attempted in the early stages of the disease and to address severe clinical signs. This can improve the health of the animal so that it can be salvaged for slaughter, helping to reduce financial loss to the producer.

Infected animals with clinical symptoms can be treated with a tetracycline antibiotic, but this does not "cure" the animal and will not prevent it from becoming a carrier animal. This should only be done in consultation with your herd veterinarian. In Canada, the use of tetracyclines to treat or control anaplasmosis is an extra-label drug use, which requires a prescription from your herd veterinarian.

Carrier animals will remain infected for life and cannot be treated to eliminate the disease. No vaccine has been approved for use in Canada.

Some vaccines, based on a live form of a related organism have been used in different parts of the world, but there have been numerous reports of adverse effects. It is also not clear if this live vaccine would protect against the strains found in North America.