

Anaplasmosis in Cattle

I. Changes to Federal Anaplasmosis Program

Effective April 1, 2014 anaplasmosis is no longer a federally reportable disease and is now listed as immediately notifiable disease. This change will mean that:

- only laboratories will be required to report suspected or confirmed cases to the Canadian Food Inspection Agency (CFIA)
- the CFIA will no longer respond to anaplasmosis cases detected on farms
- the CFIA will no longer conduct surveillance for anaplasmosis to verify Canada's status for the disease
- Cattle, bison and elk producers in Alberta will work with their herd veterinarian to deal with cases of anaplasmosis.

Anaplasmosis in cattle, bison, cervids, sheep and goats is a provincially notifiable disease and any suspected or confirmed cases of anaplasmosis must be reported within 24 hours to the Office of the Chief Provincial Veterinarian at 780-427-3448 during office hours or at 1-800-524-0051 after hours.

Although the disease is provincially notifiable, Alberta Agriculture and Rural Development will not be engaging in testing and control of the disease in the province. Producers will be responsible for prevention, testing and treatment of the disease on the farm.

If producers are purchasing animals that originate from areas where the disease is endemic (such as many US states), they should take the necessary precaution of testing the animals for absence of infection and treating the animals with an effective treatment to kill all ticks that may be on the animal before introducing the animals into the herd. Once the disease is in the herd, it is costly to treat and difficult to control. It is important that you consult your veterinarian regarding a prevention plan before you purchase cattle originating from endemic areas.

II. Anaplasmosis – The Disease

Background

- Anaplasmosis is an infectious disease of the red blood cells in cattle caused by a micro-organism most commonly transmitted by ticks. It is endemic in many areas of the world including the United States and in 2013 the disease was reported from Manitoba and Ontario. In Manitoba, the disease was reported in a cow calf operation while in Ontario the disease was reported in a dairy operation. In 2000, 18 bison in Saskatchewan tested positive for anaplasmosis. How they contacted the disease remains undetermined.
- There is higher prevalence of infection and disease in southern USA and this is due to environmental conditions that favour the survival of the tick that carries the micro-organism. Other domestic and wild ruminants such as bison, deer, elk, sheep and goats can be infected but clinical disease is seen more often in cattle.
- The micro-organism *Anaplasma marginale* causes the disease in cattle, bison and although wild ruminants get infected, they do not get sick.

How is Anaplasmosis Transmitted?

- Ticks are biological vectors of *A. marginale* and the disease is transmitted through infected tick bites. The species of ticks, *Dermacentor spp.* (Rocky Mountain spotted tick and American Dog tick) important in spreading *A. marginale* are present in Alberta. Outbreaks of anaplasmosis are usually seasonal and occur during or immediately after the tick breeding season. This biological method of transmission is the most common method of transmission but the organism can also be transmitted mechanically.
- Mechanical transmission occurs by direct inoculation of cattle with blood-contaminated hypodermic needles and blood contaminated surgical or dehorning instruments. Horseflies (*Tabanids spp.*) may also mechanically transmit the disease on their mouthparts after taking a blood meal from an infected animal.
- Wildlife may also become infected with *A. marginale*; however, they do not show signs of disease. They may act as a reservoir for the bacteria.

Clinical Signs of Anaplasmosis

- Cattle of all ages can become infected but severity is age dependent with cattle less than a year old showing no or very mild clinical signs of the disease.
- Cattle between one and two years of age will develop acute clinical disease manifested by fever, going off feed, rapid shallow breathing, reluctant to walk and pale mucous membranes but fatality is rare. Affected dairy cattle will also have a rapid decline in milk production.
- Cattle older than two years of age will develop acute clinical disease and death. Often older animals will be found dead. Fatality rates can range from 29 to 49 per cent in animals older than two years that have experienced clinical disease.
- Infected animals remain persistently infected carriers for life and are reservoirs for the organism in the herd. Current science indicates that short term treatment of infected cattle with tetracycline only temporarily eliminates the bacteria and does not eliminate the carrier state. In order to eliminate carrier state, long term treatment with tetracycline is required and this is expensive both in terms of the cost of the drug and discarding milk.

Do humans get Anaplasmosis?

Anaplasma marginale does not cause clinical disease in humans. Human anaplasmosis is caused by *Anaplasma phagocytophilum*. People get infected when an individual is bitten by a tick infected with *A. phagocytophilum*. The ticks that carry this bacterium may be present in Alberta.

What can livestock producers do to reduce the risk of anaplasmosis?

Livestock producers play an important role in keeping their animals healthy and are encouraged to talk to their veterinarians about the disease and preventing entry of the disease on the farm.

What Countries Have Anaplasmosis?

The disease is common in tropical and sub-tropical regions of the world. The disease is present on all six continents, especially in countries with warmer climates, including many southern states of United States, Australia, central and south America, Africa and southern Asia. Infection with *A. marginale* occurs only occasionally in temperate climate areas.

Producers are encouraged to monitor their animals for signs of disease and to contact their veterinarians if they suspect their animals may be infected.