

# Johne's Disease in Beef Cattle: Overview

## Takeaways

- Johne's disease, caused by *Mycobacterium avium ssp paratuberculosis* (MAP) can result in 25kg reduction in weaning weights in calves from dams having a strongly positive blood test, relative to calves from dams having a negative blood test. It will also cause increased and early culling of infected animals with weight loss and diarrhea.
- Disease in infected cattle has a long silent or "latent" period. Infected cows will shed the organism before the show clinical signs.
- Once an animal is infected there is no cure, and no vaccine is available in Canada. Infected animals eventually become clinically ill with severe weight loss and will die. Cows with early infections also cost producers in reduced weaning weights. Prevention is the best strategy.

## Disease Course and Transmission

- Infection most likely to occur early in life from their mother or contaminated calving areas, with newborn animals being most susceptible to infection.
- Long latent period in which no clinical signs of infection such as weight loss.
- Ingestion of MAP-contaminated manure is probably the most common means of exposure and infection for newborn calves.
- Cows in the later stages of infection may have MAP bacteria in their blood, which then can spread to the udder, or cross the placenta if the cow is pregnant, infecting the unborn calf before birth.

## Costs

Johne's disease brings a range of costs to infected herds, including:

- Reduced weaning weights in calves born to infected dams.
- Reduced feed efficiency in infected cows as disease progresses and absorptive capacity of the bowel is damaged.
- Increased and earlier culling of cows due to weight loss and reduced production.

## Overview

Johne's disease in cattle is caused by the bacterium *Mycobacterium avium ssp paratuberculosis*. While infection tends to occur very early in life, clinical signs of disease, which include weight loss and eventually watery diarrhea appear years later.

## Diagnosis, Management and Prevention

- Clinical signs tend to appear years after the animal becomes infected, and has been shedding MAP in feces, contaminating the farm, and likely infecting other animals for some time, so diagnosis based on clinical signs is too late to prevent further disease spread.
- Laboratory tests can use either blood, to apply an ELISA test for antibodies, or feces, to detect the actual MAP organism itself via polymerase chain reaction (PCR). Animals in the early stages of infection will be negative on both of these tests. For both types of tests, yes almost always means yes, but no may not mean no.
- The Canadian surveillance network found that between **6%** (fecal test) and **17%** (blood test) of herds have at least one infected cow. Buying new animals into your herd increases your risk of disease.
- If you have a skinny cow, especially with watery diarrhea, your veterinarian can test her for Johne's disease for you.
- If the MAP bacterium is present in your herd, just testing skinny cows will not successfully eliminate it, given the long time period when infected cows may be shedding without showing clinical signs. Your veterinarian can help you make a plan to help prevent Johne's disease from entering your herd, or control it if it's present.

## References

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