

# Johne's — Crohn's Disease

## What is Johne's disease?

Johne's disease (pronounced yo-nees), was discovered in 1895. It is a bacterial infection produced by the bacteria mycobacterium paratuberculosis (MAP). This disease is found in cattle and other ruminants (sheep, goats, deer, etc.). It affects cattle when they are very young, but takes 2 to 5 years before clinical signs appear.

The disease may be transmitted in a number of ways: in utero from the mother; through milk to newborns; through fecal contaminated udders; or in feeding areas contaminated with fecal matter. The disease causes an infection of the intestine. Infected cattle have: diarrhea; weight loss even though their appetite remains good; body wasting; decreased milk production in dairy cows; and decreased fertility.

The prevalence of Johne's disease in Canadian dairy and beef cattle is unknown. However, Johnes disease is found throughout North America and the rest of the world.

## What is Crohn's disease?

Crohn's disease is a chronic inflammatory bowel disease with no known cause. Typical symptoms include abdominal cramps, diarrhea, and weight loss. Crohn's disease can be found throughout the world, although it is more common in developed countries, especially North America and northern Europe. Canada has one of the highest incidences of the disease.

Although the cause of this disease is unknown, there are different theories being investigated. One theory is an infection by certain bacteria triggers the disease. Another is that an abnormal immune response to normal bacteria occurs which damages the intestinal lining. It is thought that the infection or trigger occurs in childhood, but the disease is usually diagnosed until between 15 and 35 years of age. Crohn's may be more than one disease, which makes research in this area difficult.

## Is there a link between Johne's and Crohn's?

Some researchers studying Johne's and Crohn's, believe that mycobacterium paratuberculosis could cause illness in genetically susceptible individuals. They says a link may be possible in some (but not all cases) because both Johne's and Crohn's are similar in a number of ways:

- They have similar symptoms such as diarrhea and weight loss;
- Both diseases produce similar types of inflammation in the gastrointestinal tract;
- Some studies have found that patients with Crohn's disease, but not all, have MAP organisms in gastrointestinal tract or elsewhere in the body.

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- Preliminary studies of antibiotics, which are known to be at least partially effective against MAP, have produced improvement in some patients with Crohn's.

Another reason some researchers believe there is a connection, is that foods may be a way for the bacteria to be transmitted from the infected animal to humans.

However, there are a number of differences between the two diseases:

- In Crohn's disease lesions may appear on the esophagus and in the mouth, whereas they don't appear in cattle that have Johne's.
- Some Crohn's patients may show signs of fistula (abnormal passages from the gastrointestinal tract), and psuedopolyps (raised areas of inflamed tissues) which don't appear in cattle with Johne's.
- Crohn's patients may show signs of arthritis in multiples joints, inflatmmation of the eyes, skin lesions, and kidney complications. This is not typical of Johnes disease in animals.

## Is there a risk for consumers?

There are several ways in which MAP may be transmitted to humans:

**Water** – Contaminated water could contain MAP organisms.

**Dairy products, specifically milk** – Pasteurization of milk should destroy low levels of MAP, however a number of retail milk samples in the United Kingdom and the United States have tested positive for live MAP organisms.

**Meat** – Map may be transmitted through meat form infected cattle.

Cooking will destroy low levels of MAP, however more research is needed to determine the processes needed to destroy the bacterium.

Since the prevalence of Johne's disease is unknown and testing for the bacteria is extremely difficult, any control of Johne's in Canada is voluntary. In an effort to ensure the management of Johne's in the Canadian beef herd, the Canadian Cattlemen's Association in partnership with the Canadian Animal Health Coalition, and Dairy Farmers of Canada, is developing a national voluntary control program for the disease.