



Cattle Producer's Handbook

Animal Health Section

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Some Questions and Answers About Johne's Disease in Cattle

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What is Johne's disease and what animals get Johne's disease?

Johne's (pronounced "Yo-nees") disease is an infectious bacterial disease primarily affecting the intestinal tract. Johne's disease should be considered a herd problem as well as an individual animal problem.

Animals most commonly affected are cattle, sheep, and goats. Johne's disease has been reported in several species of wild ruminants, both captive and free-ranging. In addition, a few reports of isolated cases in non-ruminants including nonhuman primates have occurred, but none of these species are believed to be sources for Johne's disease in cattle. Some recent reports claimed to have cultured the microbe from or detected its genetic components in humans. However, the significance of these findings in humans as they relate to any human disease has yet to be determined.

What causes Johne's disease?

Johne's disease is caused by a bacterium named *Mycobacterium avium* subspecies *paratuberculosis*. It is a distant relative of the bacterium *Mycobacterium bovis* that causes tuberculosis (TB) in humans and animals but does not cause TB.

The bacteria grow and multiply inside the immune cells of an animal. When the microbe is excreted in the feces, it can contaminate the soil or water. Outside the animal, the organism does not multiply, but it can survive over a year in the environment because of its resistance to heat, cold, and drying. So, the primary source of infection is directly from infected animals.

What are the signs of disease?

It must be emphasized that, because of the slowly progressive nature of the infection, *signs of Johne's disease may not be seen until years after initial infection*. Cattle may be infected for years before they show any signs of disease. When they finally do occur, the signs of Johne's disease are long-lasting diarrhea and weight loss despite a good appetite. Affected cattle do not generally have a fever. Some infected animals appear unthrifty and often weak while others just have chronic diarrhea. The signs of this disease can easily be confused with several other diseases. In the infected cow or heifer, noticeable signs commonly start within a few weeks after a stressful event such as calving.

What causes the signs of disease?

Specialized cells in the small intestine called the ileum where nutrients are absorbed from the feed take up the bacteria. As the body tries to rid itself of these bacteria, the immune response causes a thickening of the intestinal lining, preventing it from functioning normally. This leads to poor absorption of nutrients and eventual diarrhea. As a result, although animals may be feeling and eating well, they begin to lose weight gradually.

How can I tell if my herd is infected?

Some animals may be infected, appear normal, and be culled before they show any clinical signs. So, some owners may never realize their herd is infected. A hinting complaint in these herds, could be that herd production is going down or is not as high as it should be, especially