



# Cattle Producer's Handbook

Animal Health Section

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## Critical Management Points for Prevention and Control of Johne's Disease in Beef Cattle

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### Basis for Critical Management Points

1. Management points directed at prevention or control of Johne's disease will also reduce the risk for other important cattle pathogens such as rota and corona viruses, *E. coli*, *Salmonella* sp., *Coccidia* sp., and *Cryptosporidia*. They will also help to improve animal performance.
2. Johne's disease is caused by the bacterium, *Mycobacterium avium* subspecies *paratuberculosis*, which infects the intestinal track. The infection causes diarrhea, poor performance, weight loss (despite good appetite), and death. Signs of the disease occur more commonly during the end stages of the infection, commonly at three to six years of age.
3. Not all cows advance to clinical disease. What proportion and why is unknown.
4. The infection is long lasting and mostly hidden or subclinical in nature. Only 1 to 5 percent of infected cows in the herd will show clinical signs at one time while the rest appear healthy. Thus, Johne's should be regarded as a herd-wide problem, not just a matter for individual cows that exhibit signs of disease.
5. Infected cows may shed the pathogen in their manure for months to years before they develop clinical signs. Such cows may shed  $10^6$  to  $10^8$  mycobacteria/gram of their manure, thus severely contaminating their immediate environment. Two thimbles full of manure from such a cow may be enough to infect a calf. There may be 30 to 30,000 mycobacteria per ounce in her colostrum and milk. There also may be enough microbes circulating in her system to infect her unborn fetus still in the womb.

6. Johne's disease can be prevented, controlled, and even eliminated from infected herds by carrying out the critical management points. These points are based on understanding how the disease progresses within an animal, the ways in which the infection may be transmitted from animal to animal, and that calves are the most susceptible to infection.
7. Prevention or control of Johne's takes commitment and time. Half-hearted attempts to prevent or control the disease will generally fail. Prevention is in all ways cheaper than control. After the infection enters a herd it may be years before clinical signs are noticed and is likely to take five or more years to control. A shorter period for control is possible but may be more expensive.

### Prevention

The NAHMS Beef '97 survey showed that 80 to 90 percent of U.S. beef herds were at low risk or may not have Johne's disease. Therefore, prevention should be the goal of every beef cattle operator. There is a need for low-risk and infection-free replacement animals. Cow/calf producers should find out the infection status of their herd. If it is Johne's-free, producers should make plans to keep it that way.

The basics of preventing the introduction of Johne's disease are straightforward. Prevent introduction of the microbe by closing the herd to infected replacement, recipients, bulls, or herd additions. Guard against entry of manure contaminated equipment, feed, water, colostrum, and milk from other herds.

The current diagnostic tests for Johne's are adequate tools for use in disease prevention at the farm or ranch