

Johne's Disease Transmission: A Little Dab Will Do 'Em by T.S. Gatz

Among dairy and beef herds, the trend is obvious: Johne's disease is on the increase. Research shows that one out of 10 animals moving through livestock auction facilities has Johne's disease, with infection rates at one out of about four dairy herds and eight out of 100 beef herds. Johne's experts also maintain that producers who have been culling animals for diarrhea, rapid weight loss despite a healthy appetite and unexplained low milk production or low calf weights might want to check if their herd is infected with Johne's.

Johne's disease, a progressive contagious bacterial disease of the intestinal tract that affects ruminants, is caused by the bacterium *Mycobacterium paratuberculosis*, a relative of the bacterium that causes tuberculosis in cattle.

Animals found to have the least resistance to the bacterium are calves three months of age and younger. That said, however, research also shows that older cattle can become infected.

"*M. paratuberculosis* can replicate only when it is in animals. It cannot multiply outside the animal in nature," states Dr. Michael Collins, Chairman of the International Dairy Federation Task Force on *M. paratuberculosis*, University of Wisconsin. "The bacterium, however, can survive in contaminated soil or water for over a year because of its resistance to heat, cold and drying."

Dr. Scott Wells, associate professor in the Department of Veterinary Population Medicine, University of Minnesota, agrees with Dr. Collins, calling the bacterium a "very hardy organism."

"Transmission can be between herds with the introduction of infected animals or within herds," Dr. Wells explains. "The most prevalent transmission method within herds is fecal-oral. Two other common transmission methods are via colostrum and milk to calves and transplacental.

"If there's fecal material around anywhere, the opportunity for the organism's presence is there—and it's a risk."

Researchers have found that it takes only a tiny bit of contaminated feces to infect herdmates and newborn and young calves. In fact, a calf can become infected from simply sucking on a contaminated teat.

Dr. Bob Whitlock, University of Pennsylvania and former co-chair of the National Johne's Working Group for 12 years, stresses that the single most significant hazard of maintenance and spread of infection are the subclinical animals—those that have the bacterium but have yet to exhibit clinical signs. That's definitely a piece of the Johne's challenge as animals infected with *M. paratuberculosis* tend not to show clinical signs until they are adults.

As infected animals progress through the disease, the disease progresses and shedding of the bacterium increases.

Researchers have found that only five percent of animals progress to the critical stages of the disease—waste away despite a normal appetite—where producers might just say "Hey, she must have Johne's disease." By then, numerous animals in the herd have been infected and may not be reaching their genetic potential, which have a negative influence on a producer's bottom line.

Controlling Johne's Through Management

To help control Johne's disease, Johne's experts urge producers to take a proactive approach through implementing various management practices.

Management practices are the preferred method of control for two key reasons: 1) Treatment has not been shown to be effective; and 2) Vaccinating to protect animals against Johne's is not a viable option at this point.

Management practices that can help control Johne's disease include removing clinically ill cows, calving cows in a clean area, raising replacement heifers separately from older cows and only adding low-risk herd replacements—perhaps even limiting herd additions to animals from a test-negative herd.

Dr. Wells also advises dairy producers to take a “one dam, one calf” approach and to feed calves either milk replacer or pasteurized milk.

“Minnesota's Johne's Disease Demonstration Herd Project covers six years of work and shows that management practices can reduce prevalence of Johne's by as much as 50 percent,” Dr. Wells states. “That change can definitely have a positive influence on a producer's bottom line.”

Dr. Wells underscores the fact that there are lots of management practices that producers can implement that can help control Johne's disease. He urges producers to learn more about Johne's by talking to their veterinarians and to become involved in the Voluntary Bovine Johne's Disease Control Program in their state.

Producers can also learn about Johne's by participating in the Online Johne's Disease Producer Education Course at <http://www.vetmedce.org/index.pl?id=110337>. Producer modules cover all species, with the dairy version also having a Spanish module.

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