



Dairy Producers: Take Proactive Steps to Prevent, Control Johne's Disease

Lost productivity due to Johne's disease is estimated to cost the U.S. dairy industry \$200 million to \$250 million annually. A national study of U.S. dairies, Dairy NAHMS '96, found that approximately 22 percent of U.S. dairy farms have at least 10 percent of the herd infected with Johne's disease. The study determined that infected herds experience an average loss of \$40 per cow in herds with a low Johne's disease clinical cull rate while herds with a high Johne's disease clinical cull rate lost on average of \$227 per cow. This loss was due to reduced milk production, early culling, and poor conditioning at culling.

Other studies, including two from New York and Wisconsin, have similarly demonstrated large economic losses, particularly due to reduced milk production and premature culling.

Johne's is a slow, progressive, contagious and untreatable bacterial disease that ordinarily infects calves but does not show clinical signs until animals are three or more years of age. Infected animals maintain a normal temperature but exhibit weight loss and diarrhea. In the later stages of the infection, animals can become weak.

The most common method of infection is the ingestion of *Mycobacterium avium paratuberculosis* (MAP) bacteria via manure-contaminated udders, milk, water or feed. Infected animals shed large numbers of bacteria in their feces, leading to contamination of feed and water sources. Infected animals can also shed the bacteria in their colostrum and milk, and infected dams can also pass the disease on to their offspring.

MAP is an extremely hardy bacterium. Research shows that, while the bacterium cannot multiply outside the animal in nature, it can survive in contaminated soil or water for more than a year because of its resistance to heat, cold and drying.

Johne's disease must be managed as a herd problem and not treated as an individual cow disease. Research shows that diagnosis of one clinically-infected animal in a herd of 100 lactating cows implies that at least 25 other animals are infected and less than eight of those can be detected by the tests currently available.

Management Risk Assessment

A walk-through on your dairy can help you identify practices that are a risk for spreading Johne's disease—as well as other fecal-oral and colostrum-milk transmitted pathogens.

Maternity or Calving Area

Since calves are the most susceptible to infection, risk factors for the maternity or calving area should be assessed for the potential of a newborn to ingest manure or MAP from mature cattle. Considerations include ground and pen surfaces, contaminated udders and teats, suckling colostrum from an infected cow or manure contamination of a calf's body surfaces.



Yes No Risk Factor

- Are multiple cows in the calving area at a time?
- Is any individual calving pen or area used for additional calvings without being cleaned out between calvings?
- Is manure allowed to build up in the calving area and pose a risk for calf ingestion?
- Are sick cows kept in the calving area?
- Are high-risk Johne's cows and suspects in the calving area?
- Are the udders of cows that are calving soiled with manure?
- Do newborn calves stay with their dams for more than 60 minutes?
- Are calves allowed to nurse their dams?

Young Calves

Calves are the most susceptible to infection. As such, risk factors for this group should be assessed for the potential of a calf to ingest manure or MAP from mature cattle. Considerations include ground and pen



surfaces and potentially contaminated colostrum, milk, water and/or feed. Consider all sources for potential manure contamination including colostrum or milk from infected cows, accidental contamination of any colostrum, milk, feed or pen surfaces from mature cattle, utensils, equipment, traffic splatter or people.

Yes No Risk Factor

- Is colostrum from individual cows with unknown Johne's status fed to calves?
- Is colostrum from unknown Johne's status cows pooled and fed to newborn calves?
- Is unpasteurized milk pooled and fed to calves?
- Do you feed calves raw waste milk rather than milk replacer?
- Are calves fed unpasteurized waste milk?
- Do you collect colostrum from cows to feed calves without first cleaning the cows' udder and teats?
- Can a calf's colostrum and/or milk be contaminated with cow manure at any time?
- Can a calf's feed or water be contaminated with manure at any time?
- Are calves able to come in contact with cows or cow manure in their housing?

Post-Weaned Heifer Group

Risk factors for this group, heifers up to 16 months of age, should be assessed for the potential of a calf to ingest manure or MAP from mature cattle. Considerations include ground and pen surfaces, water and/or feed.



Yes No Risk Factor

- Do heifers have contact with mature cows or their manure?
- Is it possible for manure from cows to contaminate the feed?
- Is it possible for manure from cows to contaminate heifer water sources?
- Do heifers share pastures with mature cattle?
- Is manure spread on pasture then used by or fed to heifers?

Bred Heifer Group

Although this group of cattle is believed to be substantially less susceptible to Johne's than newborn calves, risk factors for this group deserve attention.



Yes No Risk Factor

- Do heifers have contact with cows or their manure?
- Is it possible for manure from cows to contaminate the feed?
- Is it possible for manure from cows to contaminate the water used by heifers?
- Do heifers share pasture with mature cattle?
- Is manure spread on pasture then used by or fed to heifers?

Cow Group

Even though cattle more than 24 months of age are believed to be less susceptible to Johne's, infected cattle may shed MAP and other pathogens in their feces and add significantly to the overall pathogen load in their environment. Ultimately, you should strive to reduce the pathogen load in the environment.



Yes No Risk Factor

- Is it possible for feed to be contaminated with manure?
- Is manure contamination of the water possible?

- Do cows have access to accumulated or stored manure?
- Is manure spread on pasture and grazed or fed the same season?
- Are cows showing chronic diarrhea and weight loss left in the general population without being tested for Johne's?

Additions & Replacement Groups

A key to Johne's prevention and control is to not introduce infected animals into the herd.

Yes No Risk Factor

- Do you purchase animals from herds of unknown Johne's and health status?
- Do you lease or borrow any stock, including bulls from multiple sources or herds of unknown Johne's and health status?

General Management

Yes No Risk Factor

- Do you use the same equipment to handle feed and manure?
- Do you prevent mature cow manure contamination of all feed and water, including standing run-off water?



Helping Yourself

Any area marked "yes" on your checklist deserves attention as these practices are a risk for spreading Johne's disease.

Good management and hygiene of maternity areas, calves and heifers and clean feed and water are basic for Johne's control plus help prevent spread of other bacteria, viruses and intestinal parasites spread by fecal shedding.

- Johne's prevention will help to minimize calf diseases caused by *E. coli*, Salmonella, BVD, Rota and Corona viruses.
- Cleaning and clean environments promote the health of periparturient cows.
- Attention to keeping feed, water and facilities clean for growing animals can improve growth and help control coccidian, cryptosporidia and nematodes.

An ounce of prevention is worth MORE than a pound of cure when it comes to Johne's. Prevention at home is your best protection.

Your veterinarian can help you develop a Johne's disease prevention and control plan and can implement testing strategies to identify the most infectious animals.

To learn more about Johne's, visit www.johnesdisease.org.

This brochure is provided to you by:



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