

Johne's Disease
Max Irsik DVM, MAB
Beef Cattle Extension Veterinarian
University of Florida College of Veterinary Medicine
irsikm@ufl.edu

Johne's disease (pronounced "yo-knees") also called paratuberculosis is a contagious chronic and usually fatal infection that affects primarily the small intestine of ruminants. Johne's disease can best be described as a wasting disease. Infected animals have poor absorption and utilization of nutrients due to the severe inflammation of the small intestine. Infected animals have good appetites but rapidly lose weight become weak and emaciated and either dies or is culled from the herd. Johne's disease is caused by *Mycobacterium avium* subspecies *paratuberculosis*, a hardy bacteria related to the agents of leprosy and tuberculosis. All ruminants are susceptible to Johne's disease.

Clinical signs are rarely evident until two or more years after the initial infection. Newborn calves less than 30 days of age are the most susceptible to bacterial infection. As calves increase in age they become less susceptible or more resistant to infection. Newborns most often become infected by swallowing small amounts of infected manure from the birthing environment or udder of the mother. In addition, newborns may become infected while in the uterus or by bacteria passed in milk and colostrum. Adult animals may become infected if given a sufficient dose of the organism.

Clinical signs of disease occur in adult cattle and are often associated with some form of stress. In beef cattle clinical signs commonly occur within a few weeks after calving. In dairy cattle the disease is most often seen in animals 3 to 5 years of age. Signs of Johne's disease include persistent diarrhea that is unresponsive to treatment, rapid weight loss in the face of a good appetite and an absence of fever.

Johne's disease usually enters a herd when healthy but infected animals are introduced to the herd. Herds that are not infected should take precautions against introduction of Johne's disease. Such precautions include keeping a closed herd or requiring replacement animals come from test negative herds. The U.S. department of Agriculture herd-prevalence surveys estimate that 22% of U.S. Dairy Herds and 8% of beef herds are infected. Many experts acknowledge that these numbers are significant underestimates. Most agree dairy herd prevalence in the U.S. is closer to 80%, and while the infections prevalence in beef herds may be low, the prevalence among beef seed stock operations may high.

While not all prevention strategies are applicable for both beef and dairy producers basic prevention strategies are suggested which may have individual application for either a beef or dairy producer.

Some basic prevention strategies are

- Calves should be born in a clean environment.
- Reduce a newborns exposure to manure from adult animals by separation when possible.
- Avoid manure contamination of feed by using feed bunks and not using the same equipment to handle feed and move manure.
- Avoid manure contamination of water sources were animals drink.

- For natural colostrum needs of newborn animals use colostrum from Johne's negative animals.
- Do not pool colostrum.
- For dairy calves avoid natural nursing and milk feeding whenever possible. Feed an artificial milk replacer or pasteurized milk instead of raw milk to supply the needs of newborns. Never feed pooled milk or waste milk.
- Thoroughly clean the udder and teats before collection of the colostrum to avoid manure contamination.
- MAP can survive up to a year in the environment so if possible, for pastures that have become contaminated, till the ground or graze using non replacement feeder cattle.
- Identify all females in the herd. Identify and remove or keep separate all test positive animals.
- Prevent infection from spreading by culling or separating offspring of infected mothers as soon as possible.
- If purchasing herd additions, buy from low risk herds, ideally from test negative herds.

For beef and dairy producers Johne's disease can be a significant health concern for a herd. The best way to prevent the disease if it is not present in your herd is to be very careful when adding replacement animals to your herd. These outside animals can serve as a source of infection for other animals in the herd. Producers should consider AI and embryo transfer as a means of introducing new genetic material into a negative herd, minimizing the herds potential for exposure.

If Johne's disease is present in a herd, producers should work with their herd veterinarian to establish protocols for disease control. Tests are available that may help identify suspect and or disease positive animals. Testing animals for Johne's disease is not a black and white process, there are numerous considerations to be evaluated before a test or a test program is instituted. Interpretation of test results can be and is complicated and producers are encouraged to work with their herd veterinarian to determine if a prevention program, testing, control or a combination of programs is indicated for their herd.