



Johne's Disease in Beef Cattle



Johne's Disease, caused by *Mycobacterium avium var paratuberculosis* (MAP), is a slowly-progressing but ultimately fatal disease of all cloven-hoofed animals. The bacteria are ingested early in life, absorbed through the intestinal wall, and hide in the animal's white blood cells. Here they can thrive and multiply without being exposed to antibodies, then spread to other cells, and cause chronic inflammation. This inflammation produces the intestinal thickening that leads to weight loss, severe diarrhea, and eventually death.

Facts about MAP/Johne's Infection

- Ingestion of MAP shed in feces is the most common route of infection
- A MAP-infected cow with **no symptoms** can shed 200 million bacteria per day in feces
- Nursing cows also shed millions of bacteria in colostrum and milk
- A **one-time dose of one million bacteria** is considered enough to infect a calf
- Most animals that become infected will do so by 6 months of age

Economic Realities

- A MAP-infected cow can infect her own calf and any other calves around her
- A calf that ingests MAP will absorb some into the intestinal lining and shed the rest in its feces ("pass-through"); the calf can be dispersing MAP even before becoming infected
- MAP-infected cows have lower feed efficiency, lower milk production, wean smaller calves, are less likely to breed back, and bring a lower slaughter value (which decreases cash flow)
- Clinical cows may get "tanked" at slaughter and you will pay for disposal
- MAP can survive for long periods in the environment:
 - 18 months in water troughs
 - 12 months in natural range pasture
 - 1-5 years on permanent pasture
 - 9 months in puddles/fecal slurries
 - 9 months in freezing temperatures
- The estimated prevalence of MAP infection in beef cows is 5-8% and 20% of herds have at least one Johne's-positive animal.
- Just because a herd has good genetics and a good reputation does not mean they don't have MAP!
- All available tests are good at finding positive animals: **A POSITIVE IS REALLY A POSITIVE**; Negative may just mean not positive YET; **FECAL CULTURE** is the most reliable negative test at this time

The connection between Johne's Disease in animals and Crohn's disease in people has not been established; however, MAP can be cultured from people with Crohn's, so a connection is still possible. Animal rights and anti-livestock groups use this potential to their advantage, and consumers **must** be able to feel that their food is safe. Control measures implemented now will go a long way toward reassuring the public that the Beef Industry is addressing this disease.

Ignoring the problem can have devastating consequences!

WHAT CAN YOU DO TO PROTECT YOUR HERD?



Measures that decrease risks for Johne's will decrease risks for other diarrhea diseases (E. coli, Salmonella, Rota, Corona, Coccidia)

- 1. CREATE AND FOLLOW A GOOD VACCINE & DEWORMING PROGRAM WITH YOUR HERD VET**—healthy cows are more likely to raise healthy calves, sick cows are easier to identify
- 2. PRACTICE AND BELIEVE IN BIOSECURITY—Don't be the source of infection**
 - Clean and disinfect boots, change coveralls/clothes before handling young stock
 - Soap and water (or hand cleaning gel) are your friends—hand washing goes a long way to decreasing disease spread
 - **DON'T LEASE ANIMALS**; but if you do, make sure it is from a herd with the same health program and **TESTING** that you have
- 3. KEEP GOOD RECORDS**—if a cow is diagnosed with Johne's, you should cull her calves from the herd; this isn't possible if you can't identify her offspring
- 4. MAKE FEASIBLE MANAGEMENT CHANGES**—assess the risks to your herd and decide what changes work for you; this is the most effective way to control this disease
 - This can be done on your own or through the Voluntary Johne's Control Program
 - Contact Dr. Randy Wheeler (program coordinator), IDALS, 515-281-0866
 - The program provides you with a one-on-one consultation with the Iowa District Veterinarian to identify risks in your herd at no charge to you
 - You can also elect to participate in diagnostic testing to establish if MAP is in your herd and look for possible shedding animals
- 5. WATCH COWS AND BULLS FOR CLINICAL DISEASE. Cows are most likely to shed MAP when their immune system is stressed; this occurs during late pregnancy and just after calving**
 - Look for cows that are in poor condition around calving, especially if they stand out from other herdmates—if every animal is on the same vaccine, deworming, and nutrition program, that cow has no good reason to be thin
 - Calve in the “cleanest” pasture, use only for calving, and move pairs out ASAP
 - Calve heifers separate from cows—easier to intervene, less fecal contamination from cows to calves of first-calf heifers
 - Keeping frozen colostrum is a good idea; buying or storing frozen colostrum from an untested cow or pool of cows **IS NOT!**
 - Do not keep sick cows in the calving pasture or around young stock
 - Rotate feeding locations so that manure does not build up in one area
 - Use a water trough whenever possible—avoids manure contamination
 - If manure is spread on pasture, consider waiting to graze until following season
 - Shorten your calving season—calves will be more uniform age and immune status, less likely to have one-month-old calves with four-month-old calves
- 6. DON'T BUY THE PROBLEM—Ask for Johne's Herd Status and Test Results**
 - Bulls are with calves when they are under 6 months old (breeding season) and can be a source of MAP; purchase bulls and replacement heifers from known-status herds, ask for test results on the animal's dam or adult cows from the herd
 - Don't buy untested dairy nurse cows, don't buy dairy drop calves to graft on to cows
 - Asking herd health questions of sellers doesn't make you mistrusting, **IT MAKES YOU A SMART BUYER**