



STATE OF MAINE  
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY  
ANIMAL WELFARE PROGRAM  
28 STATE HOUSE STATION  
AUGUSTA, MAINE 04333-0028

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## What is Johne's Disease?

- **Bacterial infection:** *Mycobacterium avium* subspecies *paratuberculosis*
  - Found **worldwide in cattle, bison, elk, deer, goats, and sheep.**
  - **Incurable and often fatal**
  - **Hardy** - can live in soil/feces on the ground for up to a year.
  - **Economic impact** is significant. Loss of milk production, carcass yield, stock, feed, adult animals, resources, time, labor etc.
    - Average estimated producer cost per case in Maine based on current economic studies: \$249.00
- Prevented with **Biosecurity!**
  - Closed herd, testing surveillance plan, wash boots, clothing, don't share tools/needles etc.
- **Reportable monthly** to the Animal Health Team @ ME DACF.
  - Maine has not had a confirmed/reported Johne's case since 2018
    - For more info on reportable diseases in Maine, visit: [Disease Information: Animal Health: Division of Animal and Plant Health: Maine DACF](#)

## What are the Symptoms?

- In sheep and goats, the clinical signs are harder to notice than in cattle.
- **SHEEP:** Intestines become thick and less efficient at absorbing nutrients.
  - Sheep continue to eat but lose weight and "waste away."
  - Less than 20% of sheep show diarrhea.
  - In about 70% of sheep, the disease may remain asymptomatic. Some individual animals never show signs of the disease but shed Johne's bacteria in their feces and infect other sheep as well as contaminate the environment.
- **GOATS:** weight loss, poor performance & occasionally clumpy feces are the only visible symptoms.
  - Important to note not all clumpy feces are due to Johne's disease.
  - Unexplained rapid weight loss is the most common clinical sign.
  - Affected animals usually show signs before they are one year of age.

## How is Johne's Spread?

- Animals are most susceptible to the infection in the first year of life.
- 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 swallowing bacteria passed in milk and colostrum.

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- Animals exposed at an older age are not likely to develop clinical disease until they are older than two years.

### **How do we Test for Johnes?**

- In live animals: fecal organism detection tests (culture and polymerase chain reaction methods (PCR)) is the most accurate diagnostic test.
- Fecal Culture: On a herd basis approximately 40% of infected cattle will be detected by the most sensitive fecal culture technique. The sensitivity of fecal culture is low because some infected animals in the early stages of the disease do not shed the Johne's bacteria in their manure or shed the agent intermittently and can be missed at testing time. New liquid culture systems have reduced fecal culture growth testing time to 5 weeks, it used to take 12-16 weeks.
- PCR of feces can detect the presence of Johne's bacteria without having to grow the bacteria. The test takes less than 3 days and isn't affected by Johne's bacteria strain variations. Disadvantage of higher cost and the potential of missing animals shedding low numbers of bacteria.
- ELISA blood test detects antibody in the serum and can be used on a herdwide basis to screen for infection. Although less accurate than fecal culture, these tests are more rapid and less expensive. Serologic tests also work well to confirm clinical cases. It is important to note that these tests are not licensed for use in Small Ruminants and were developed for cattle, though they are used in Johne's detection for sheep and goats.
  - In the dead animal, Johne's disease may be diagnosed by culture and histopathology of the lower small intestine and associated lymph nodes.

### **How to Prevent Johnes's Disease?**

- A closed herd is a safer herd. A closed herd is a herd that doesn't bring in new animals, ever. Even if you test the animals before bringing them in, your herd isn't closed!
- Work with your veterinarian! Develop a strategic plan for Johne's prevention & control.
- Basic Strategy Plans Include
  - Lambs & kids should be born in a clean environment.
  - Separate young stock from adults to reduce exposure risk.
  - Avoid manure contamination of feed.
    - Use feed bunks, don't feed on the ground & avoid overgrazing.
    - Keep heavy-use turnout areas clean as possible.
    - Don't use the same equipment to handle feed and move manure.
  - Avoid manure contamination of water sources where animals drink.
  - Use colostrum from Johne's negative animals. Do not pool colostrum.
  - Feed pasteurized milk or a commercial milk replacer instead of raw milk to supply the needs of newborns. Never feed pooled milk or waste milk.
  - Practice good milking hygiene protocols to prevent manure from getting into the milk.
  - 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, try to buy from low-risk herds.
- Test all animals intended for purchase BEFORE you bring them home.

### **What do I do if I Suspect Johne's?**

- Contacting your veterinarian is the first step.
- Making sure permanent ID is in place will help identify animals and reinforce health record validity. This ID also helps validate a healthy animal as much as a possibly sick one.

### **Learning Resources**

- [www.johnes.org](http://www.johnes.org)
- [USDA APHIS | Johne's Disease](#)
- [Johne's Disease in Goats – Goats \(extension.org\)](#)