# Johne’s Disease

## Prevention
- Implement a biosecurity plan that identifies sources of disease risk and strategies to avoid disease introduction
- Inquire about the Johne’s status of a herd when purchasing new animals; important consideration must be given to bulls because they are with cows at a time that calves are highly susceptible
- Raise newborn animals in a clean environment
- Avoid manure contamination of feed and water sources
- Identify and remove affected animals
- Maximize herd disease resistance through good nutrition and parasite control
- Pasteurize pooled milk fed to calves

## Cause
- *Mycobacterium avium* subspecies *paratuberculosis* (MAP)
- Infects all species of ruminants
- Shed in manure, colostrum or milk of infected animals and can also transmit *in utero*
- Can survive up to a year in cool, wet environments
- No treatment/ no commercial vaccination

## Clinical signs
- Weight loss, chronic diarrhea, and death
  - Due to thickening of the intestine wall and reduced absorption of nutrients
- Age of onset of clinical signs depends on age and dose at time of exposure, genetics, and stress; incubation period ranges from 6 months - 4 years
- Clinical signs do not directly correlate with shedding risk. Animals likely shed bacteria in feces before showing clinical signs

## Transmission
- PRIMARY: Ingestion of manure through contaminated feed or water (fecal-oral)
  - Also, colostrum or milk from infected cows and *in utero* transmission by infected cows
- Animals <6 mos. of age have highest susceptibility to infection

## Diagnosis
- Tests detect either the presence of MAP or the animal’s response to the bacteria (antibodies)
  - Herd screening tests and diagnostic individual animal tests are available
- Blood, feces, and/or tissues can be tested
- Testing programs should address both clinically ill animals as well as subclinically infected animals (asymptomatic carriers of bacteria)

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