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## Johne's Disease Risk Assessment

### Your Beef Operation's Checklist

#### Do you...

- \* Buy, rent or have bought replacement stock, including bulls?
- \* Raise young stock (newborn up to bred heifers) in contact with Johne's positive adult cattle or run off from their manure?
- \* Let calves nurse Johne's positive dams for colostrum?
- \* Freshen or calve-out cows in barns or dirty maternity pens or pastures?
- \* Graze young animals with or in rotation after adult Johne's positive cattle?
- \* Overcrowd your cattle pens or pastures?
- \* Feed hay and feedstuffs on the ground?
- \* Use the same equipment to handle manure and to handle feed?
- Have a barnyard run-off to or graze cattle in direct contact with common watering sources, e.g. ponds or streams?

If you answered "yes" to any of the above, your herd is at risk for.....Johne's Disease

***Johne's disease costs the Georgia Beef Industry 2,449,000 to 4,898,000 each year***

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## What is Johne's Disease?

Johne's (pronounced "yo-knees") disease or Paratuberculosis is a chronic (many years) mycobacterial infection affecting the lower small intestine of ruminants. The disease is caused by the bacteria *Mycobacterium avium spp paratuberculosis*. Paratuberculosis has been found worldwide in cattle, sheep, goats, and many non-domestic ruminants such as farm-raised deer, elk, bison, and zoological wildlife.

## What causes Johne's Disease?

*M. avium spp paratuberculosis* is a slow growing bacteria in the same category of mycobacteria as bovine and avian tuberculosis. In the laboratory, the organism may take weeks to grow. The bacteria is very resistant in damp environmental conditions, **surviving up to 9 months in manure pits and anaerobic manure slurry, 11 months in soil and 17 months in water**. Exposure to direct sunlight, heat and specific disinfectants will kill the organism. As the bacteria slowly grow in the small intestine of the infected animal, the intestinal wall becomes thickened and unable to absorb nutrients. The organism has been cultured from the small intestine, regional lymph nodes, uterine and mammary tissues, milk and manure of infected animals.

## What are the clinical signs?

Obvious clinical signs in cattle include weight loss (even with a normal appetite), diarrhea, and lowered milk production. The diarrhea may occur off and on, potentially becoming chronic. It is unresponsive to treatment. Eventual death will occur in weeks to months. Some animals will develop a low grade fever and edema (swelling) under the jaw. In other cattle, symptoms may be seen only as a general unthriftiness, less than expected milk production or increased susceptibility to problems such as infertility. Individual animals will be infected, but can appear normal up to 2-10 years of age.

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## When does clinical Johne's develop?

Although some cattle may never show diarrhea or weight loss during their normal productive life (these are called subclinical infections), typically clinical disease develops during the first or second lactation. Clinical disease has been seen in animals as young as 6 months and as old as 15 years. The age when an animal is first infected, the dose or amount of bacteria, some stress factors and genetics appear to be involved in determining when an animal becomes clinical. Again, subclinical animals just don't seem to do as well as expected.

## How does it spread?

Infected calves, cows and bulls **can all shed the bacteria in their manure at any time**, but the risk increases as the animal becomes older or clinically sick. Primarily calves, but animals of all ages ingest the bacteria through feed or water contaminated with manure from infected animals. Feed troughs, hay bunks, water tanks, ponds, etc. can be contaminated directly from an infected animal or indirectly from equipment used to feed or spread manure. Newborns and young animals can ingest the organism located on manure laden teats or directly from colostrum or milk from infected cows. Rarely, calves can also become infected while in the uterus of a positive cow (natural dam or embryo transfer recipient).

## Who is susceptible to infection?

**Newborn calves or young animals are the most susceptible to infection.** While animals develop some resistance with age, **individual animals of any age can be infected** if there are enough bacteria in the environment, feed or water. All breeds of cattle (dairy and beef) can be infected.

## How many in a herd will be affected?

Infection rate depends on many management factors in a herd, but if left unchecked **will increase over time**. The number of clinical animals seen does not reflect the total number of infected animals in a herd. For every animal showing clinical signs, there may be 10-25 other animals of different ages that are very likely infected. One clinical case may be seen every few years, then all at once, 10% or more of the herd is showing advance clinical signs.

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## Why is Johne's Disease Important to the Georgia Beef Industry?

A recent Georgia prevalence study found 4% of Georgia beef cattle Johne's positive. The economic analysis of Georgia's Johne's problem revealed that:

**Johne's cost the Georgia Beef Industry \$2,449,000 to \$4,898,000 each year**

Does Johne's disease cause Crohn's disease in Humans? There is a perception that Johne's disease is a public health problem; however, scientific evidence to date is inconclusive.

There is a great lack of knowledge about Johne's disease in the beef industry.

Is there a liability issue when you sell Johne's infected cattle? We may have seen the end of "buyer beware".

Reduced weight gains and cull cow values are substantial. The estimated low prevalence of Johne's disease in the beef industry offers a "golden" opportunity for the beef industry to eradicate the disease.

### **For the Commercial Beef Operator?**

- \* Bolster consumer confidence in Beef as a safe and healthy food
- \* Johne's is a contagious disease – You can buy it and sell it to other producers.
- \* Premature culling of clinical or infected animals: the overall cull rate in the infected herd is increased and results in retaining less productive animals which would have normally been culled from a non-infected herd
- \* Decreased weight and salvage value at slaughter
- \* Movement restrictions on infected cattle
- \* Johne's reduces the animal's resistance to other diseases and results in veterinary costs.
- \* Techniques used to control Johne's will also reduce the incidence of other diseases.

### **For the Seed Stock Operator?**

- \* Having a Johne's test free herd status improves the marketability of seed stock for both domestic and foreign markets
  - \* Selling infected animals puts the buyer at risk and can result in legal consequences for the seller
  - \* Keeps your customers happy, the bulls you sold won't "go to pot"
  - \* Techniques used to control Johne's will also reduce the incidence of other diseases.
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## Prevention, Control and Elimination of Johne's Involves:

### **Prevention:**

\* **The best way to avoid buying Johne's disease is to be as certain as possible that animals brought into the herd are not infected.**

Buy only from Johne's test negative herds.

### **If you have Johne's....Control and Eliminate It:**

#### **Develop a herd plan for the control and eventual elimination of the disease:**

- \* Identify and remove Johne's infected animals and their offspring to minimize disease spread
- \* Permanently identify all cows and their daughters
- \* Remove or keep separate all test-positive animals and their offspring from the rest of the herd

#### **Reduce spread of Johne's by managing manure:**

- \* Calve in a clean environment and maintain high standards of cleanliness during calving periods
- \* Keep new cow/calf pairs in clean uncrowded pastures.
- \* After weaning, separate replacement calves from adults until they are at least a year old
- \* Use feed bunks and hay racks and DO NOT use the same equipment for handling feed and manure
- \* Avoid using manure contaminated water

#### **Reduce spread by colostrums management:**

- \* Use only colostrum from Johne's negative cows if supplement is required
- \* Clean the udder and teats before collecting colostrum
- \* Clean dam's udder and teats following any assisted births

### **Purchase bulls and replacement females only from known Johne's status herds**

*Participation in the Georgia Voluntary Johne's Control Program will you assist in controlling Johne's disease in your herd.*

For information on the program contact;  
Georgia Dept. of Agriculture or  
GA Designated Johne's Coordinator  
Dr. Mel Pence at 229 386 3340 or  
[mepence@uga.edu](mailto:mepence@uga.edu)

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# JOHNE'S DISEASE

## In Georgia Beef Cattle

### The Disease and Its Economic Impact to the Georgia Beef Industry



Developed by the  
Members of the Georgia  
Johne's Working Group

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