UNDERSTANDING BOVINE JOHNE'S DISEASE
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Due to widespread concern from many ranchers in this area I would like to talk about a wasting condition, commonly called Johne's disease. Paratuberculosis or Johne's (pronounced "Yo-nees") disease is a chronic intestinal infection of cattle. The disease infects both domestic and exotic ruminants. The causative agent of the disease is Mycobacterium paratuberculosis, a slow growing bacterium that can live in the environment for a year or more. The condition is named after Dr. Heinrich A. Johne, a German Veterinarian who first described the disease in a dairy cow in 1895.

Johne's disease is a hot topic in the beef and dairy industry in the United States. Each year these industries are losing an estimated 1 billion dollars as a result of this disease. The first key to understanding Johne's is to discuss how the bacterium causes infection and how it is transmitted from animal to animal. Transmission to calves may occur before birth as a result of nursing infected dams or from ingesting contaminated fecal material on teats and hair, and in feed and water. Very young calves are the most susceptible to infection. As they increase in age, calves become less susceptible or more resistant to infection.

In an infected calf, the bacterium invades the last segment of the small intestine called the ileum. The growth of the organism and spread of infection is very slow and usually takes several years before any disease is detectable. As the bacterium multiplies it is released more and more into the feces. The fecal shedding becomes the primary way Johne's is spread from animal to animal. This makes Johne's difficult to control because infected animals, showing no symptoms (subclinical) are contaminating their environment.

Clinical signs of this disease occur only in adult cattle and are often associated with some form of stress, such as calving or nutritional shortages. These clinical cattle are shedding large numbers of organisms. The bacterium do not multiply in the environment, but can survive in the soil and water for more than a year because of resistance to heat, cold and drying.

Don't forget Johne's is a wasting disease. Adult cattle develop enteritis, inflammation of the small intestine that becomes thickened and corrugated. Poor absorption of nutrients occurs and watery diarrhea develops. Even though the animal has a good appetite, it will lose weight, become weak and emaciated, and eventually die or be culled. This may occur over a short or extended period of time. Typically only a very small percentage (less than 1%) of an infected herd may show clinical signs in a given year. The most common history I hear from a rancher with an infected herd is that they had an occasional cow with diarrhea and weight loss. These cattle did not respond to dewormers, antibiotics, or nutritional supplements.

Keep this in mind, for every clinical case there is likely several subclinical.

Production losses in affected herds result from early culling, lighter weaning weights from lower milk production, lower fertility due to poor body condition, and death of the clinical animal. Diagnosis of cattle with clinical signs of Johne's is relatively straightforward. These animals exhibit the classic signs of weight loss and diarrhea. However there are many other diseases that may mimic Johne's including:

1. Internal parasites
2. BVD (Bovine Viral Diarrhea)
3. Hardware Disease

These are just a few. A serum sample submitted by your veterinarian to a lab will confirm a diagnosis of Johne's. The serum sample is tested for antibodies to the Johne's agent. If the sample is positive and the animal has clinical signs, then it is positive. There are several other means of diagnosing Johne's. Contact your veterinarian for more information.

The real problem with Johne's disease diagnosis lies with the carrier animal that is not showing any signs and is shedding bacterium.. At present, the best tool for identifying infected cattle is to use a combination of blood testing and fecal cultures for the organism.

The next question frequently asked by the rancher that has it in their herd is how do they control it? To control the disease in an infected herd, early detection and removal of infected cattle, and protection of newborn calves from contaminated feces is vital. There are no drugs for treatment against Johne's disease and no vaccines that prevent it. Follow some of these guidelines to help control Johne's in an infected herd.

Control Procedures:

1. Random fecal culture of cattle every six months.
2. Isolate and blood test animals with symptoms
3. Cull infected cows and bulls.
4. Cull replacement offspring of infected cattle.
5. Avoid manure contamination of feed and water.

In summary, Johne's disease in cattle causes diarrhea, weight loss, and eventual death in infected cattle. It is a complicated disease because it has a long incubation period, the agent can survive in the environment for long periods, and carrier cattle (that can shed bacterium) with no signs of disease are difficult to detect at present. Your veterinarian is your most important source of information about this disease.

Currently the Texas cattle industry has requested that the Texas Animal Health Commission organize an advisory committee on this disease. The committee will be made up of producers and veterinarians who will oversee the program. Their purpose will be to identify clean herds and through education help producers keep them clean. The future program is not an eradication program. The cattle industry is anticipating that clean cattle will translate to premiums for them.