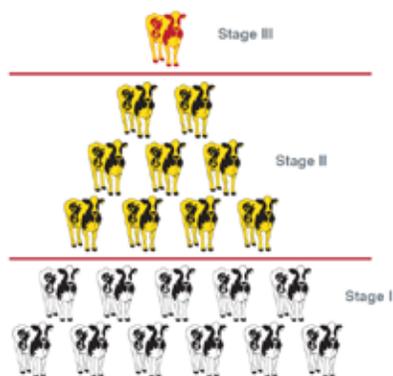


How is Johne's Disease like an Iceberg?

Source: Based on information from www.johnes.org, edited by Alberta Milk staff

For every obvious single clinical case (stage III) of Johne's Disease on the farm, 15-25 other animals are likely infected. The clinical case represents only the "tip of the iceberg" of the Johne's infection. However, only 30-40 per cent of all infected cattle can be detected with even our most sensitive fecal culture technique. Thus, in a herd of 100 milking cows, two clinical cases at one time suggest 20-30 others are infected, and less than half of the infected cattle are detectable by fecal culture. If 25-30 animals are fecal culture positive on a single herd (100 adults) fecal culture test, it is likely that at least 50 per cent of the cattle in the herd are infected.

"The Iceberg Phenomenon" - Infection in the Herd



STAGE I: *Silent, subclinical, non-detectable infection - typically this stage occurs in all calves, heifers, and youngstock less than two years of age and many adult animals exposed to small doses of disease-causing organism.* Infected animals at this early stage are rarely detected with currently available diagnostic tests. This stage progresses slowly over many months or years to stage II.

STAGE II: *Subclinical infection—typically this stage occurs in older heifers or adults.* Animals at this stage appear healthy but are shedding adequate numbers of *M. paratuberculosis* organisms in their manure to be detected on fecal culture. Blood tests will detect some, but not all animals at this stage. These animals pose a major but often hidden threat for infection of other animals through contamination of the environment.

STAGE III: *Clinical Johne's Disease—any animal with advanced infection, the onset which is often associated with a period of stress, such as recent calving.*

Cattle at this stage have intermittent, watery pea-soup manure. Animals lose weight and gradually drop in milk production but continue to have a good appetite. Some animals appear to recover but often relapse in the next stress period. Most of these animals are shedding billions of organisms and are positive on culture. Clinical signs often last several weeks to months before the animals are sent to slaughter in a thin, emaciated condition. Most herds although they are infected, never see an animal in this stage.

The iceberg phenomenon illustrates the key concept in recognizing the potential impact that Johne's Disease can have on a herd. That is, if the infection remains unchecked, the rate and number of infected animals in the herd increases progressively over time. Early diagnosis and prevention of spread, before multiple clinical cases have surfaced, can avoid the development of Johne's Disease into a significant herd problem five to 10 years into the future.

Alberta's Johne's Disease Initiative is designed to help dairy producers minimize the risk of Johne's Disease in their herd. To conduct a risk assessment for your herd, please contact Jodi at 780 577-3307.

Follow us next month as we present-Schalk Dairy Farm: Johne's Infection in a "Closed" Herd.



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