



An interactive tool to inform Johne's Disease control in beef herds: What test, when and how often.

IMPROVED JOHNE'S MANAGEMENT

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Background: Johne's disease is a chronic gastrointestinal disease caused by a bacterium called *Mycobacterium avium* subspecies *paratuberculosis* or MAP. It causes a thickening of the wall of the intestines, reducing nutrient absorption. Generally, calves pick up the infection through colostrum, milk, or contact with manure from an infected cow, but symptoms don't typically show up until years later. Although infected animals may not be showing symptoms, they are often shedding the MAP bacteria in their manure, causing further spread and infecting other animals in the herd. Advanced Johne's manifests as weight loss, chronic diarrhea, and eventually death. There are no effective vaccines or treatments, and the current diagnostic test do not reliably detect infected animals in the early stages of the disease.

While typically recognized as a problem in the dairy industry, Johne's can and does exist in beef cattle herds in Canada. [Prevalence estimates in Alberta in the early 2000s](#) indicated 1.2% of the cows in the provincial herd were infected, with a herd level prevalence of 7.9%. Data from the [Western Canadian Cow-Calf Surveillance Network](#) which encompassed sentinel herds in BC, SK, and AB between 2013-2018 indicates prevalence rates of just under 6% of herds and 2% of cows.

Objectives: The objectives of this study are to:

1. Evaluate changes in Johne's prevalence
2. Describe the typical progression of Johne's in infected beef herds and inform control strategies
3. Create a web-based interactive tool to inform Johne's disease testing options in cow-calf herds

Implications of the Research: This research will result in a producer-oriented tool to help inform Johne's testing and management decisions in the most cost-effective manner for several production scenarios in western Canadian beef production. This tool will be used to explore the impact of various testing and management strategies on relative differences in predicted time and costs to control Johne's in a herd. Additionally, ensuring current prevalence numbers are available on a regular basis aids in monitoring the potential spread of this disease.

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