Johne's Disease - Curse of the Cattle Industry

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Bovine paratuberculosis, or Johne's disease, was identified more than a century ago. It has become one of the most common and costly infectious diseases of dairy cattle. This disease starts as an infection of young calves but typically does not show signs until 2 to 5 years later, is difficult to identify accurately, reduces milk production and productive life of cattle, and is virtually impossible to cure. Dairymen, and the whole dairy industry, need to know more about this disease. Too little attention has been paid for too long.

The causative agent, Mycobacterium paratuberculosis, is similar to the bacteria that cause tuberculosis and leprosy. It has similar characteristics of very slow growth, very chronic disease progression, and extreme resistance to elimination from an infected animal. Typically, it is shed by an infected animal in feces, picked up in fecally contaminated feed or water, and spread to another susceptible animal. Young calves less than 6 months are most susceptible. Once infected, animals harbor the organism for many months to years before they show up positive on testing or develop disease signs. The infection primarily affects the bowel, leading to chronic diarrhea, poor feed assimilation, and excessive weight loss. Diseased animals do not feel sick enough to refuse feed until they are severely affected. With this insidious onset of disease, it's unusual to have more than one symptomatic animal at a time. So the disease goes unnoticed as a herd problem, and the sick individuals are simply culled. There is no consistent state, national or industry-wide control program, and, thus, the disease has spread- both within and between herds.

Recent research findings have added to our understanding, but have also added to our concern about Johne's disease. Many of our previous beliefs about disease transmission and its control have been challenged. In-utero infection of calves appears to occur in about one-third of infected dams, contrary to earlier notions that fecal contamination of feed and water was the sole means of transmission. Infection has been spread to cattle 16 to 27 months old under group housing conditions. The bacteria can be shed in milk and colostrum without fecal contamination.

Bovine paratuberculosis has not been considered a threat to humans but the agent has now been identified in humans with Crohn's disease, a chronic bowel disease. Although the overwhelming bulk of evidence still suggests no direct link between the human and bovine transmission, the question remains. Furthermore, research on the effectiveness of pasteurization to kill the Johne's organism in milk is conflicting.

Despite recent progress in testing methods, identification of infected animals prior to advanced disease and fecal shedding is not very accurate. Thus, strategies for biosecurity against infection can not be accurately evaluated. Questions like how to choose the source for replacement heifers and what is the appropriate disposition of youngsters from a Johne's positive herd linger unanswerable until more accurate testing methods are developed.

The time is gone when we could think the major impact of Johne's disease was an occasional cow with diarrhea that could be culled and forgotten. The disease is a herd problem that only gets worse with time, and that reduces production and profit. It may even come under scrutiny as a threat to human health. It behooves us to learn more about this problem and to consider measures for its control. Johne's disease will be the subject of a presentation at the Colorado Dairy Days program in January.