

Association between management and Johne's disease herd infection status



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Introduction

Johne's disease (JD) control programs aim to reduce the risk of introduction or transmission of *Mycobacterium avium* subsp. *paratuberculosis* (MAP) through implementation of best management practices.

The aims of this study were:

- Identify common management practices associated with high risk of transmission of MAP
- Evaluate differences in management between infected and uninfected herds



Materials and Methods

Data for this cross sectional study were collected within the Alberta Johne's Disease Initiative (AJDI), a voluntary control program launched by Alberta Milk and coordinated by the Dept. of Production Animal Health, University of Calgary.

Procedures in the AJDI:

- The herd veterinarian takes six environmental samples to determine the infection status of the farm.
- A 34-question risk assessment is filled out based on risk factors known from literature.

Laboratory procedures:

- Environmental samples were cultured using TREK ESP culture system and IS900 PCR.

Analyses:

- Summarizing statistics were performed to identify common management practices.
- The association between management practices and herd MAP infection status was analysed using logistic regression.



Results

Identified commonly used management practices from risk assessments. From literature, these are known to be associated with high risk of transmission of Johne's disease (n= 253):

- 63% had no restriction of any visitor access to animals
- 75% purchased animals within the last 5 years without considering MAP infection status of the seller farm
- 55% of the producers fed calves with pooled milk from several cows

Classification of herds into uninfected and infected

Significant differences in management practices between MAP-positive (n= 61) and negative (n= 162) herds

	% negative herds	% positive herds
JD has been observed previously on the farm	25	49
Manure is spread on pastures in which heifers graze in the same year	5	15
At least traces of manure are visible at water troughs and feed bunks of lactating cows	64	79

Discussion and Conclusions

The present study identified specific management practices present on most farms. Producer education should focus on improvement in those areas, as it would target most farmers and therefore help to reduce the spread of MAP between and within herds.

Management differed between MAP-positive and negative farms. Changes in manure management and feed and water hygiene might help to control the disease on positive farms.

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