Isolation of *Mycobacterium avium* ssp *paratuberculosis* from the saliva of cattle: a pilot study

U. S. Sorge, *DMV, PhD*; **S. Kurnick**; **S. Sreevatsan**, *DVM, PhD*
Dept. Veterinary Population Medicine, University of Minnesota, St. Paul, MN 55108

Introduction

Johne's disease can be an economically devastating disease on dairy farms. Current risk assessment (RA)-based control programs use best management practices to prevent the transmission of the causative pathogen, *Mycobacterium avium* subsp *paratuberculosis* (MAP), between animals. Most effort is focused on the fecal-oral route of transmission between infectious dams and calves. Because MAP has been isolated from water troughs, the objective of this pilot study was to determine whether MAP can be detected in the saliva (a previously overlooked route of transmission) of infected cattle.

Materials and Methods

After validation of the methods, saliva samples were collected from 29 high-risk cows (mature Jersey cows with low body condition) from a herd that had a history of confirmed cases of Johne's disease and analyzed with a PCR assay. Additionally, grab samples of feces were analyzed for MAP using PCR assay and culture. Production records of the cows were also obtained.

Results

At the time of abstract submission, MAP culture results for fecal samples were not available, but fecal samples from 10 cows had yielded positive results for MAP using PCR assay. Furthermore, saliva samples from 14 of 29 cows yielded positive results for MAP utilizing PCR assay. Whether the cows were actively shedding MAP in their saliva or whether they had picked it up from the environment could not be determined with the available data. However, if the MAP in the saliva was the result of ingestion from the environment, it would be expected that the saliva samples from all cows would have tested positive for MAP.

Significance

This is the first study to demonstrate that MAP can be detected in the saliva of cows. Further studies are needed to investigate this potentially important transmission pathway.