EFFECT OF FREEZER STORAGE TIME AND THAWING METHOD ON THE RECOVERY OF MYCOPLASMA BOVIS FROM BOVINE COLOSTRUM

L. Gille ¹, F. Boyen ², B.R. Valgaeren ¹, L. Van Driessche ³, F. Haesebrouck ², P. Deprez ¹, B. Pardon ¹

1 Department of Large Animal Internal Medicine, Faculty of Veterinary Medicine, Ghent University, Belgium
2 Department of Pathology, Bacteriology and Avian Diseases, Faculty of Veterinary Medicine, Ghent University, Belgium

Introduction

*Mycoplasma bovis* is an important cause of pneumonia, arthritis, mastitis and otitis in cattle. Infections with this agent are often seen as untreatable and no effective vaccine is available at this time. Due to these factors, prevention of *M. bovis* infections is key. Milk and colostrum are considered important sources of *M. bovis* infection from cows to calves. Using colostrum from *Mycoplasma*-free herds or artificial or lyophilised colostrum is expensive, reduces the herd-specific immunity and holds a certain biosecurity risk. Pasteurization is an option, but is a costly and hard-to-implement method on smaller farms. Screening dams and excluding those with *Mycoplasma* positive colostrum cultures might be an alternative strategy.

![Inoculated colostrum thawing at room temperature (20°C)](image)

Material and Methods

Gamma irradiated colostrum was inoculated with a known amount of *M. bovis* CFU and frozen in a conventional freezer.

1) A longitudinal study examined the survival of two *M. bovis* strains frozen at -18°C over 3.5 months. (Figure 2)

2) The second part of the study identified the effect of different thawing temperatures (45°C and 20°C), thawing frequencies (once or twice) and *M. bovis* inoculation concentrations (10⁴ cfu/mL and 10⁶ cfu/mL) on the recovery of *M. bovis*.

![Mean concentration of colony forming units per mL colostrum after freezing and thawing a single time over a set time period](image)

Aim

Evaluate the efficacy of on-farm freezing and thawing methods
- as an *M. bovis* decontamination alternative for colostrum
- to evaluate the possibility of sample storage to perform batch testing later on.

Results

Freezing significantly reduced the amount of colony forming units in colostrum by approx. 1 log (0.81-1.02 resp, SD 0.13-0.15). Freezing up to 3.5 months did not further reduce the amount of colony forming units significantly. Thawing the sample and then refreezing it did have a significant effect.

Conclusion

Freezing and subsequent thawing is insufficient to decontaminate *M. bovis* infected colostrum. Storage of samples by freezing until analysis has limited effects on *M. bovis* isolation.

Linde.gille@ugent.be