

A Comparison of Cow and Bulk Tank Cultures for *Streptococcus agalactiae* in Two Herds in Iran

M. Bolourchi, DVM, PhD

Associate professor, Department of Clinical Sciences, Faculty of Veterinary Medicine, University of Tehran, P.O. Box: 14155-6453, IRAN, E-mail: bolourchi@parsonline.net

R. Kasravi, DVM (corresponding author),

Tehran, P.O. Box: 19615-964, IRAN, E-mail: kasravir@yahoo.com

Introduction

Due to the obligate nature of *Streptococcus agalactiae*, its presence in bulk tank milk (BTM) is the exclusive result of shedding of bacteria from infected quarters. Consequently, BTM has a very high specificity, but a low sensitivity for identifying *S. agalactiae* at the herd level when using traditional milk culture techniques. The objective of this study was to determine the association of the bulk tank culture results with the results of the corresponding cow milk cultures for *S. agalactiae* in two dairy herds in Iran.

Materials and Methods

The study was conducted in two dairy herds with 852 (herd A) and 252 (herd B) lactating cows. Composite milk samples were aseptically collected from all lactating cows in both herds, and BTM samples were collected bi-monthly for one and three months in herds A and B respectively, including the days herds were cultured. Bulk tank somatic cell count (BTSCC) was measured using direct microscopic counting methods and microbiological procedures were conducted in accordance with National Mastitis Council (NMC) standards.

Results

Based on total herd cultures, *S. agalactiae* was isolated from 39 (4.58%) and 77 (30.55%) cows in herds A

and B, respectively. On the days of herd culture, 8000 cfu/ml of *S. agalactiae* were detected from the bulk tank of herd B (with higher intraherd prevalence) versus the negative result for herd A (with lower intraherd prevalence), despite the presence of at least 39 infected cattle in this herd. The average BTSCC was 277,165 and 610,521 cells/ml in herds A and B respectively, which also indicated the higher prevalence of mastitis in herd B. In addition, during the periods of bulk tank milk analysis, *S. agalactiae* was isolated from one out of two (50%) and six out of seven (85.71%) bi-monthly samples in herds A and B, respectively.

Conclusions

Results of this study demonstrate that the of difference in intraherd prevalence, and variation in the rate of bacterial shedding are probably responsible for disagreement between cow and bulk tank culture results under some conditions. In addition, absence of *S. agalactiae* in a single bulk milk sample does not mean that the organism is not present in the herd. Therefore, establishing a bulk tank profile through multiple sampling is imperative to make such a decision. New culture methods, using selective media and large inocula, are also needed to improve the sensitivity of bulk tank culture. These results support the previous work of some other researchers.