Session (11) :
Dairy Production

Effect of Milking Routines, Hygiene Practices and Storage Condition on Milk Production and Quality in Small-scale Dairy Camels' Farms

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ABSTRACT

This study investigated the relationship between animal management, milking routine and practices and their effects on milk production, physic-chemical and microbiological quality and on Somatic Cell Count (SCC) in small-scale dairy camels' farms. A survey of 8 periurban dairy camels' farms showed that the use of machine milking is still limited (12.5%). The milking hygiene practices need to be improved. Indeed, only 25% practiced teats dipping and washed the material with hot water and detergents. In addition, 75% of farmers milked their animals bedding area. Conservation and marketing conditions for camel milk were low. Analysis of on-farm milk quality showed that machine milking resulted in an increase in milk production but also an increase in the microbial load. Average value of SCC was higher in milk samples milked by hand from semi-intensive farms (23,6 ± 3,4 x 10^4 cell/ml) compared to milk samples from intensive farms milked by hand or by machine (15 ± 5 and 7,5 ± 2,5 x 10^4 cell/ml respectively). Quality assessment at different stages of the production chain showed that the chemical composition of milk was conserved, whereas the physical and microbiological quality was altered. At production, the load in Mesophilic Total Aerobic Flores (MTAF) was $17.4x10^4$, compared to bulk and points of sale milk which had a significantly higher load ($21.2x10^5$ and $61.2x10^5$ respectively). At points of sale, 100% of samples exceeded the Acceptability Threshold of Acidity, MTAF, and Total Coliforms. Moreover, prevalence of *S. aureus* registered 100%. Improvements of milking hygiene and milk storage and transport conditions are therefore essential in order to guarantee a quality camel's milk that meets the needs of the consumer.

Keywords: *Camels, milking routine, hygiene practices, milk quality.*