USE OF SLIGHTLY ACIDIC-ELECTROLYZED WATER SUPPLYING SYSTEM FOR IMPROVEMENT OF HYGIENIC CONDITIONS OF TEAT LINERS OF AUTOMATIC MILKING SYSTEM (AMS)

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Aims: Prevention of bovine MASTITIS and production of high quality milk are strategic to favorable development of the dairy business and proper response to consumer demand. The hygienic status of AMS appears to be dependent on the environmental conditions of dairy housing and could not ignore the spread of contagious pathogens via teat cup liners of AMS. The inner surface of teat cups of AMS after milking is basically treated by a cleaning system with compressed air and clean water mixture. This process may involve the risk of transferring MASTITIS-causing pathogens via teat liners and may associate with lowering the hygienic conditions of teat liners of AMS. The aim of this study was to evaluate the hygienic conditions of teat liners of AMS using a slightly acidic-electrolyzed water supplying system.

Materials and methods: The slightly acidic-electrolyzed water (HOCl, pH6) produced by the system (Purester⁵) is attached to AMS (Lely, DeLaval). Swab samples were taken from the inner surface of teat liners to evaluate the effects of electrolyzed water which was used for washing teat cup liners after milking. The cleanliness was evaluated by densitometric analysis and bacterial counts were measured. The number of viable, non-viable and total bacteria was also counted (Bioplorer⁶).

Results: The OD values, marker for cleanliness, of inner surface of teat liners after using the electrolyzed water were lower than those of water supplied. The number of viable bacteria in samples from inner surface of liners was significantly decreased after rinsing with electrolyzed water. The ratio of viable to non-viable bacteria was markedly decreased by electrolyzed water supply. Not all bacteria were killed, significantly reduced number of bacteria was found in swab samples from teat cup liners after both unit flush and system cleaning.

Conclusion: The use of SAE water supply system for rinsing the teat liners after milking in AMS proved to be effective to clean the inner surface of teat cup liners and to reduce bacterial counts. This is contributable to the improvement of the hygienic status in the AMS system.