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Abstract No. 3

PaperTitle **The Lactoperoxidase System in Goat Milk and its Effects on Microbial Safety**

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**ABSTRACT**

The lactoperoxidase (LP) system is a natural antibacterial system found in milk and can be used for preservation of milk in areas where milk cooling facilities are not available.

The effect of the Lactoperoxidase system (LPS) alone and in combination with pasteurisation, on the growth of *Listeria monocytogenes* (LM) ATTC 7644 in goat milk at 0h, 6h and after pasteurisation as well as in cottage cheese during shelf life of 10 days at 4 °C was studied. After 6h of Lactoperoxidase (LP) activation, LM ATTC 7644 level significantly decreased (log 0.5 cfu/g) in LP activated goat milk, while the level in the control increased (log 0.5 cfu/g). The count after pasteurisation was log 1.2 cfu/g and log 2.9 cfu/g in the LP activated pasteurised and control raw goat milk respectively. In the LP activated pasteurised goat milk cottage cheese the count decreased more (log 1.69 cfu/g) compared to (log 1.1 cfu/g) the control pasteurised goat milk cottage cheese and all other treatments. This combination may be used to reduce the LM levels in goat milk and cottage cheese.

Furthermore LP was found to be inhibitory to the growth of *Escherichia coli*, *Staphylococcus aureus*, *Listeria monocytogenes* and *Brucella melitensis* in goat milk kept at 30 °C for 6h. Cheese made from LP-activated goat milk had significantly lower coliform and coagulase positive staphylococci counts after 60 days of ripening as compared to cheese made from untreated control goat milk.