

## ABSTRACT

*Food borne diseases are mainly related to the consumption of food of animal origin. Bacterial pathogens are involved in the majority of cases that demand hospitalization and cases associated with death of the patient. Thus, considerable effort is directed to control the outbreaks caused by bacteria. The main objectives of the present work were threefold: (a) identify and characterize a group of bacterial pathogens (Escherichia coli O157:H7, Listeria monocytogenes, Salmonella e Staphylococcus aureus) recovered from pasteurized milk and Minas Frescal Cheese; (b) detect their sources of contamination from farm to retail establishments in the municipality of Juiz de Fora, State of Minas Gerais. In addition, a study was conducted to detect the source of contamination of L. monocytogenes along the processing of Minas Frescal Cheese in a small dairy plant. This dairy was monitored during one year. Fifty-six samples of pasteurized milk and 50 samples of Minas Frescal Cheese were examined in the dry season (June-September) of 2005. Fifty-four samples of pasteurized milk and 50 samples of Minas Frescal Cheese were examined in the rainy season (January-March) of 2006. We examined at least five samples per brand of milk or cheese. Pathogens were identified according to traditional microbiology methods and by PCR methodology. S. aureus was the only pathogen found in milk samples (2.7 %). L. monocytogenes was recovered from 4.0 % of Minas Frescal Cheese samples, but from only one of the 10 brands tested. S. aureus was also recovered from 34% of the Minas Frescal Cheese samples. These samples represented seven brands, and 32% of the them produced S. aureus counts above  $10^3$  UFC  $g^{-1}$ . S. aureus counts above  $10^5$  UFC  $g^{-1}$  were found in 13% of the cheese samples and were considered potentially capable of causing food poisoning. L. monocytogenes was recovered from the dairy plant environment that produced Minas Frescal Cheese. It was found in 50% of the equipments and utensils tested, and from 40% of the environment sites tested, it was not found in raw milk. A total of 344 L. monocytogenes isolates (5 to 20 isolates for positive sample) were characterized as belonging to the same serotype (1/2a), suggesting that they were from a single origin, which was confirmed by PFGE genotyping. Evidence was found that linked the point source of contamination to the fridges used to store the cheese overnight. Hygienic measures and good manufacturing practices principles were successfully applied to the dairy establishment that resulted in the elimination of L. monocytogenes from both the cheese produced and the dairy environment.*

*Key-words: food safety, pasteurized milk, Minas Frescal Cheese, food borne pathogens.*