

TITLE: EFFECTS DURING RIPENING CHEESE ON INDICATOR MICROORGANISMS AND *LISTERIA MONOCYTOGENES*

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ABSTRACT: Cheese ripening is a stage in which physical, biochemical and microbiological transformations occur within the mass, under the effects of lipolytic and proteolytic enzymes, most of which are microbial in origin, being a very complex and variable phenomenon in each cheese. Two studies were conducted, in order to verify the effect of ripening period on the development of micro-organisms. The first one included cheeses produced with raw milk (n = 7) for evaluation of aerobic mesophilic microorganisms counts, total coliforms and *Escherichia coli*. The second one was based on cheeses produced with laboratorial sterilized milk (n = 7) to establish the score of inoculated *Listeria monocytogenes* Scott A 49594. In both studies, cheeses were matured under controlled conditions of temperature (7.5 ± 1.5 ° C) and humidity ($45 \pm 5\%$), for 60 days. Analysis of feedstock (raw milk and sterilized milk), curd immediately after production, cheeses on the first day (01) and every ten days (10, 20, 30, 40, 50 and 60) were carried out. Moreover, cheeses' moisture were estimated. Mesophilic aerobic counts were 5.77 CFU/mL log in milk sample, 6.67 log CFU/g in curd sample, 8.92 log CFU/g in cheese sample within twenty days of ripening, when it reached its maximum count and 7.24 log CFU/g at the sixtieth day of ripening. Total coliform counts were 5.47 log CFU/mL in milk sample, 6.33 log CFU/g in curd sample, 7.73 log CFU/g on the tenth day of ripening, when it reached its maximum count and 5.18 log CFU/g at the sixtieth day. *E. coli* counts observed were 2.52 log CFU/mL in milk sample, 3.48 log CFU/g in curd sample, 5.19 log CFU/g with twenty days of ripening when reached its maximum count and 2.30 log CFU/g at the sixtieth day of ripening. *L. monocytogenes* counts were 6.50 log CFU/g in curd sample, 8.09 log CFU/g on the thirtieth day, when it reached its maximum count and 7.66 log CFU/g within sixty days of ripening. Based on the results, it was concluded that the 60-day maturation period was not enough to ensure hygiene and safety of cheeses, regarding behavior of microorganisms studied under the circumstances analyzed.

Keywords: artisanal cheeses; cheese production; coliforms; *Escherichia coli*, pathogenic microorganisms