

Study of the behaviour of potentially pathogenic bacteria during the manufacture of Parmigiano-Reggiano cheese. – Panari G., Perini S., Guidetti R., Pecorari M., Merialdi G., Albertini A.

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ABSTRACT - *Study of the behaviour of potentially pathogenic bacteria during the manufacture of Parmigiano-Reggiano cheese.* - To study the fate of potentially pathogenic bacteria during the manufacture of Parmigiano-Reggiano, a cheese made from raw milk, four wheeles were produced with milk inoculated with, respectively, *Escherichia coli*, *Salmonella typhimurium*, *Staphylococcus aureus* and *Listeria monocytogenes*. The survival of the added microorganisms was evaluated in samples of curd taken when extracted from the vat and, successively, at 12, 24, 48 and 72 hours after cheesemaking. At extraction, *L. monocytogenes* was not detected and the number of *S. typhimurium* was very low. 12 hours after manufacture only *E. coli* was detected, at low levels. None of the inoculated pathogens were detected 24 hours after fabrication. The rapid disappearance of pathogens depends on a technology providing: i) a high cooking temperature (55 °C and more); ii) a long permanence (about 60 minutes) of the curd under whey at this temperature; iii) the fast growth of thermophilic lactic acid bacteria, that lowers pH to 5.0 within a few hours and prevents the development of the other bacteria. The results confirm that Parmigiano-Reggiano cheese made from raw milk is hygienically safe and we can affirm that the technology of manufacture has the same effect as the pasteurisation of the milk.