Microbiological quality of artisanal cheese made from thermized milk with and without endogenous fermented culture

Vanice Natera[1], Cynthia Jurkiewicz[1,2], Bernadette Dora Gombossy de Melo Franco[1], Gustavo Augusto Lacorte[1,3], Uelinton Manoel Pinto[1]

[1.] Food Research Center, Phaculty of Pharmaceutical Sciences, University of São Paulo, São Paulo/SP, Brazil
[2.] Maua Institute of Technology, São Caetano do Sul/SP, Brazil
[3.] Federal Institute of Minas Gerais, Sciences and Languages Department, Bambuí/MG, Brazil

The production of artisanal cheeses plays an important cultural and socioeconomic role in Brazil, with Minas Gerais standing out among other regions for its diverse types and quality of artisanal cheeses. Minas artisanal cheeses are made with raw milk, traditionally in regions including Serra da Canastra, using a natural endogenous starter culture called \"*pingo*\" in their production. This study aimed to evaluate the influence of *pingo* on the counts of *Escherichia coli*, coliforms, and coagulase-positive *Staphylococcus* (CPS) in artisanal cheeses produced on a laboratory scale over 60 days of ripening. Samples were collected during production as well as during different ripening times. Experimental cheeses were made with thermized milk and the addition of *pingo* obtained from producers in the Serra da Canastra, following the manufacturing process adopted in the region. As a control, experimental cheeses were made without the addition of *pingo*. The results showed that the addition of the endogenous culture in the production of the experimental cheese influenced the reduction of *E. coli*, coliforms, and CPS populations during the 60-day maturation of the cheeses. The *E. coli* population reached the legal limit of 2.7 log CFU/g after 22 days of maturation for cheeses produced with *pingo*, whereas for cheese without the starter, this limit was only reached after 60 days of ripening. For coliforms, the legal limit of 3.7 log CFU/g was reached after 14 days of maturation for cheeses with *pingo* and 60 days for those without it. The CPS counts reached the limit of 3.0 log CFU/g after just 7 days of ripening for cheeses made with pingo and once again, it took 60 days to reach the legal requirement for those samples prepared without the starter. Furthermore, *pingo* also influenced the pH value at the second salting stage, with a more pronounced reduction in pH with cheeses produced with *pingo*. The water activity of the cheeses did not differ between the treatments. Our results demonstrated that cheese produced with *pingo* had better microbiological quality and can be ripened for a shorter period than those made it its absence, confirming the importance of this natural starter culture in cheese production.

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