

**TITLE:** SERRO ARTISANAL CHEESE PRODUCED IN BRAZIL HAS A MICROBIAL SAFETY STATUS FOR CONSUMERS

**AUTHORS:** FUSIEGER, A.; ANDRETTA, M.; ALMEIDA T. T.; FERREIRA, L. R.; CARVALHO, A. F.; YAMATOGLI, R. S.; NERO, L. A.

**INSTITUTION:** INSPOA, UNIVERSIDADE FEDERAL DE VIÇOSA, VIÇOSA, MG (CAMPUS UNIVERSITÁRIO, DEPARTAMENTO DE VETERINÁRIA, DVT, CEP 36570-000, VIÇOSA – MG, BRAZIL)

**ABSTRACT:** Artisanal Minas cheese has socioeconomic, historical and cultural importance, being produced with techniques transmitted from generation to generation. It is named according to their region of origin, such as Serro, Salitre, Campos das Vertentes, Canastra, Araxá and Triângulo. The cheeses are extensively handled and subjected to microbiological contamination during production. This product has specific legislation, which regulates the production, inspection and retail sale. Bacteriological research is essential in the production of safe food, since it often allows to understand the hygienic conditions of production. The objective of the present study was to evaluate the microbiological safety of artisanal cheeses produced in the region of Serro, Minas Gerais, Brazil, evaluating the performance of Petrifilm™ STX for enumeration of *Staphylococcus* spp. A total of 53 samples of artisanal cheese from Serro were collected and subjected to the research of *L. monocytogenes* and *Salmonella* spp. and enumeration of *Staphylococcus* spp. Artisanal cheese samples and the obtained *Staphylococcus* isolates were submitted to PCR to search for genes related to classical staphylococcal enterotoxins (SEA, SEB, SEC, SED and SEE) and ELISA to detect the presence and production of these enterotoxins. None sample presented positive results for *Salmonella* spp. and *L. monocytogenes*. *Staphylococcus* spp. counts were variable, depending on the enumeration protocol adopted, but in general, counts were significantly higher with Baird-Parker when compared to Petrifilm™ STX ( $p < 0.05$ ). None of the samples presented a positive result for the presence of enterotoxins, nor amplification of PCR products for the classic enterotoxins. *S. aureus* isolates did not produced staphylococcal enterotoxin nor presented the enterotoxin-related genes. The results indicated poor hygienic conditions in the production of cheese, due to the high frequencies of samples that presented coagulase positive *Staphylococcus* counts higher than the limits allowed by the current legislation. However, a safety status of the samples was recorded due to the absence of common foodborne pathogens and toxins, often described as common hazards associated with cheeses made from raw milk.

**Key-Words:** *L. monocytogenes*, *Salmonella* sp., *Staphylococcus* sp., handling