

**TITLE:** COAGULASE POSITIVE *Staphylococcus*, TOTAL AND THERMOTOLERANT COLIFORMS IN MINAS FRESCAL CHEESE FROM MARKET IN PIRACICABA, SP, BRAZIL.

**AUTHORS:** GERALDI, A. C<sup>1</sup>.; CRUZADO-BRAVO, M.L.M<sup>1</sup>; PADOVANI, N. F. A<sup>1</sup>; BARANCELLI, G. V<sup>1</sup>; CONTRERAS-CASTILLO, J. C<sup>1</sup>.

**INTITUTION:** <sup>1</sup>Departament of Agroindustry, Food and Nutrition, Luiz de Queiroz College of Agriculture – University of São Paulo (Av. Pádua Dias - Vila Independência, CEP- 13418-260- Piracicaba – SP)

**ABSTRACT:**

Minas Frescal is one of the most popular cheese in Brazil. Usually it has pH values of 5.0 - 6.3, salt concentration between 1.4 and 1.6%, high water activity and moisture content above 55%. These characteristics provide ideal conditions for the multiplication of pathogenic and spoilage microorganisms. The Coagulase-positive Staphylococci (CPS), *S. aureus* is capable to produce very enterotoxins that cause intoxication symptoms in humans. The coliforms are easily destroyed by heat treatments usually employed for milk, being an indicator of process failures or post-processing contamination in pasteurized foods. The aim of this work was to evaluate the physico-chemical and microbiological quality of Minas Frescal cheese marketed in Piracicaba, São Paulo. In May 2017, twenty-seven samples were collected from ten commercial places. The moisture content was determined by oven drying at 105°C up to a constant unit and the pH by pH meter. For ECP analysis, five typical colonies from Baird Parker agar were selected for catalase and coagulase tests and Gram stain. For total and thermotolerant coliforms the most probable number technique was used (MPN-5 tubes). pH values ranged from 5,0 to 6,8 and the average of moisture was 57,5%. According to Portaria 146/1996 do Ministério da Agricultura, Pecuária e Abastecimento, 74.07% (20/27) of the samples were in disagreement with the standards established for total coliforms. Of these (6/20) presented values > 1,6x10<sup>5</sup> MPN/g. Considering to thermotolerant coliforms, 33.33% (9/27) of the samples were in disagreement with the standard defined by the RDC nº 12/2001 da ANVISA. Regarding to CPS, 18.51% (5/27) did not meet the standard established by Resolution nº 12/2001 with a mean of 6.54x10<sup>5</sup> CFU/g. Therefore the results revealed that 51.85 % (14/27) of the samples did not meet the standards limits established in the current legislation to CPS and thermotolerants coliforms. The presence of total and thermotolerant coliforms, and ECP above the established standard by legislation indicates a poor microbiological quality of the Minas Frescal cheese, failures in the hygienic sanitary conditions during the processing. It's important to implement improvements in processing control, through good manufacturing practices and the effective inspection by the responsible authorities.

**Keywords:** Coagulase Positive *Staphylococcus*; Coliforms; Minas Frescal cheese; Moisture; pH

**Development Agency:** Unified Scholarship Program-University of São Paulo