

EVALUATION OF THE PRESENCE OF GRAM-NEGATIVE BACTERIA IN COALHO CHEESES

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SUMMARY:

Curd cheese is a product obtained from the coagulation of milk by means of rennet or other appropriate coagulating enzymes, produced throughout the region of the Brazilian Northeast. For being produced from raw milk and at home, where there is a lack of correct hygiene in cheese production, the natural and pathogenic microbiota can spread, causing damage to production and human health. This research aimed to analyze the presence of Gram-negative bacteria in Coalho cheeses produced in different microregions of Paraíba. The present study was carried out following two methods for the detection of Gram-negative bacteria: for the first method, twelve samples of Coalho cheese from the Catolé do Rocha, Serra de Teixeira and Seridó Ocidental Paraibano microregions were obtained and biochemical tests known as INViC and for the second method, twenty-eight samples were acquired from the microregions of the Paraíba Sertão that were identified through molecular analyzes (PCR). Of the twelve Coalho cheese samples obtained from the Serra de Teixeira, Catolé do Rocha and Seridó Ocidental Paraibano Microregions, 47 colonies were positive for *Escherichia coli* through biochemical tests. The quality of the cheese is related to several sources of contamination, since the hygiene of the animal to the storage and processing of the cheese. Of the twenty-eight samples of Coalho cheese obtained from the microregions of Sertão da Paraíba, 51 colonies amplified by PCR-ribotyping and sequenced, were identified as *Escherichia coli*, *Klebsiella pneumoniae* and *Shigella flexneri*, based on the gene region score identity 16S. Of the species belonging to the *Enterobacteriaceae* family, *Escherichia coli* was the one with the highest number of colonies, with 39 strains. *E. coli* was isolated from curd cheese samples from almost all microregions, with the exception of the Sousa and Patos microregions. It was concluded in this study that of all the analyzed regions, only the cheese from the Teixeira microregion had the level of total coliforms, thermotolerant and *E. coli* allowed by the Brazilian Legislation, which makes the other cheeses unfit for consumption human. *Escherichia coli*, *Klebsiella pneumoniae* and *Shigella flexneri* were detected in the PCR method, which are pathogenic bacteria in humans.

KEY WORDS: PCR; *Escherichia coli*; *Klebsiella pneumoniae*; *Shigella flexneri*;