

TITLE: INFLUENCE OF MANUFACTURE PERIOD ON THE MICROBIOLOGICAL QUALITY OF PORUNGO CHEESES FROM THE SOUTH-WEST REGION OF SÃO PAULO STATE

AUTHORS: AGUIAR, K. S.; RODRIGUES, N. A.; PIMENTEL-FILHO, N. J.

INSTITUTION: UNIVERSIDADE FEDERAL DE SÃO CARLOS CAMPUS LAGOA DO SINO (RODOVIA LAURI SIMÕES DE BARROS, KM 12, SP-189, 18290-000, BURI – SP, BRAZIL)

ABSTRACT:

Porungo cheese is a traditional artisanal product produced in the southwestern region of São Paulo State and has sensorial characteristics very similar to mozzarella, although no characterization of the product manufacturing process has been performed so far. Since they are made from raw milk, without any previous heat treatment, and do not have specific legislation, these cheeses show a potential risk to consumers' health. Dozens of families in the countryside depend on income from commercializing this product. Scientific research with a focus on family farming plays a fundamental role in helping and subsidizing the improvement of the quality of artisanal products such as these cheeses. The objective of this work was to characterize the traditional production process of porungo cheese and to determine the influence of the manufacture period on the microbiological quality of cheeses produced in the cities of Angatuba and Campina do Monte Alegre, SP. To this end, producers were visited and a structured questionnaire was applied to diagnose the amount of milk and cheese produced, manufacturing method, actors involved in the process, and the way of commercialization. In addition, cheese samples were collected in six properties in two periods of the year: water (rainy) period (from December to March) and dry period (from June to August). Microbiological analyses were performed evaluating the contamination by total and thermotolerant coliforms, coagulase positive *Staphylococcus aureus*, *Salmonella*, and *Listeria monocytogenes*. Comparing the microbial counts in the two evaluated periods it was not possible to observe statistical difference ($p > 0.1$). *Salmonella* and *L. monocytogenes* was not detected in all cheeses analyzed, while the number of thermotolerant coliforms remained low both in the water period (0.95 ± 0.86 log CFU/g) and in the dry period (1.03 ± 0.64 log CFU/g). On the other hand, the counts of *S. aureus* were elevated in the two periods: $4.82 (\pm 0.91)$ log CFU/g in cheeses collected during the water period and $4.79 (\pm 0.97)$ log CFU/g in cheeses made during the dry season. The results indicate that although the product is made from raw milk, the stretching step in hot water reduces microbial counts making the product safe for consumption. Considering the high contamination by *S. aureus*, bacteria present in the skin and hairs of manipulators, good manufacturing practices must be strictly adopted.

Keywords: Artisanal cheese, foodborne pathogens, food quality.

Development Agency: Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq).