

TITLE: MICROBIOLOGICAL ANALYSIS OF PASTEURIZED MILK IN CURITIBA, PR

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ABSTRACT

The aim of this study was access the microbiological quality of pasteurized milk by required standards on national legislation. Three samples of pasteurized milk by different brands (X, Y and Z) under Inspection of Paraná Service (SIP) or Federal Inspection Service (SIF) were collected weekly by August to October, 2016 at retail trade of Curitiba, PR. Each sample was diluted 1:9 in peptone water buffered 1 and 0.1% and serial dilutions up to 10^{-6} were carried out. Viable mesophilic aerobic microorganisms were quantified according to Normative Instruction 62/2003 of the Brazilian Ministry of Agriculture, Livestock and Food Supply, total coliforms and *Escherichia coli* using Petrifilm EC™ methodology, as well as the *Salmonella* sp. according to Bacterological Analytical Manual of the Food and Drug Administration. Regarding count mesophilic aerobes, X brand presented results of 3.0×10^3 at 6.3×10^6 CFU/mL, Y brand, 2.6×10^3 at 3.3×10^6 CFU/mL and Z brand presented results lower than 8.0×10^4 CFU/mL. National legislation does not establish limits for pasteurized milk made available in retail, only for those still in industry, which is $n=5$; $C= 2$; $M=4,0 \times 10^4$ and $M=8,0 \times 10^4$ CFU/mL, there no standard for indicative sample. Total coliforms results ranged from 3.0×10^0 to 2.6×10^3 CFU/mL in the brand X samples, while Y brand ranged from 2.0×10^2 to 6.0×10^4 CFU/mL, and for Z brand, the results were $<1.0 \times 10^0$ CFU/mL. *Escherichia coli*, all samples had count below 1.0×10^0 CFU/mL. Regarding research for *Salmonella* spp., 100% of samples were negative, being in agreement with national legislations (industry and retail), demonstrating the effectiveness of the pasteurization process. Although the absence of *Samonella* spp. and *E. coli* sanitary indicator in all brands evaluated, with all samples being released for human consumption, the presence of total coliforms in the X and Y brands indicated hygiene failures during the production, processing and/or storage product, resulting in reduced shelf life. It is important to emphasize that although there is extensive dissemination of good practices at milking, quality milk consumed in Brazil continues to present poor quality, as may be observed in this study. Differentiated actions must be proposed for real conviction and training of milk producers regarding quality.

Keywords: food-borne diseases, human consumption, microbiological quality, national legislation