



## Evaluation of the production technologies and the microbial and physico-chemical qualities of curdled milk produced in Benin

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### ABSTRACT

**Objectives:** The aim was to identify the different production technologies, the hygiene of the producers and the microbiological and physico-chemical qualities of curdled milks produced in Benin.

**Methodology and Results:** Thirty-two curdled milk samples were collected from five municipalities and microbiological analyses were carried for the detection of *Salmonella* sp. The enumeration of total microbial flora, total and faecal coliforms, *Escherichia coli*, lactic flora, sulfite-reducing anaerobic germs, *Staphylococcus aureus*, as well as yeasts and moulds using normalized methods was carried out. The pH and the titratable acidity of the samples were determined by the AOAC method (1990). Results showed that majority of curdled milk producers of Benin are Peulh women. Two types of milks (fresh cow milk and powdered milk) were used for the preparation of these curds with two different technologies (technology using powdered milk in their preparation with old curdled milk as a starter and that using fresh cow milk with endogenous starter) were used. Microbiological and physico-chemical analyses revealed that the average total microbial flora was  $255 \pm 126.10^6$  cfu/ml. The lactic flora, as well as yeasts and moulds flora were respectively  $8.29 \pm 6.56 \times 10^6$  cfu/ml,  $12.431 \pm 20.706 \times 10^3$  cfu/ml and  $13 \pm 23$  cfu/ml. Coliforms count varied from  $11.313 \pm 13 \times 10^3$  cfu/ml at 30°C to  $0.983 \pm 1.228 \times 10^3$  cfu/ml at 44°C, while the average *Escherichia coli* count was  $0.34 \pm 0.89$  cfu/ml. The average pH and titratable acidity of the samples were respectively  $3.77 \pm 0.17$  and  $156.36 \pm 30.22$  degree Dornic. All analysed curds were exempt of *Salmonella* sp, *Staphylococcus aureus* and *Clostridium* spp.

**Conclusion and application of findings:** The poor quality of the studied curdled milk samples poses serious health risks to consumers. Therefore, this study calls for producers' sensitisation and training on good hygienic practices for safer curdled milk production with less public health risk.

**Key words:** curdled milk, quality, technology, health risks, Benin