

Title: ASSESSMENT OF MICROBIOLOGICAL QUALITY OF RAW MILK OBTAINED FROM REFRIGERATION TANKS AT THE DAIRY REGION IN ALAGOAS

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Abstract:

Bovine milk has been used in human alimentation since the beginnings of civilization as a source of protein, fat, energy and other essential constituents. Brazil is one of the main milk producers in the world. Regarding the quality of this aliment, many points have been debated focusing mainly on the prime-material quality, control of the production process and maintenance of this product's quality. It's fundamental a judicious assessment of the produced milk, which will be consumed in natura or for confection of other alimentary products. Therefore, this work had as its objective to assess the microbiological quality of milk obtained through refrigeration tanks at the Alagoas Dairy Region, verifying the contamination through mesophiles, psychrotrophics, total coliforms and, at 45°C, *Escherichia coli* and *Staphylococcus aureus*. Milk samples were collected from twenty individual and collective refrigeration tanks at municipalities that compose the Dairy Region in Alagoas. After the programmed tank agitation, 80 mL of raw milk were taken using a sterile stainless steel collector. These samples were properly identified, conditioned in sterile flasks and transported in isothermal boxes with ice. The microbiological analysis were realized through adequate methodologies and recognized at the aliment area. It was verified that 75% of the assessed tanks had manual milking and 30% of the samples were from collective tanks. Regarding the microbiological assessment, it was observed that 70% and 80% of the samples presented counts above the permitted by present legislation for mesophilic and psychrotrophic bacteria, respectively. It was verified that 40% of the analyzed samples presented contamination by coliforms at 45°C over 1.100NMP/mL, with *E. coli* presence in 50% of these samples. These results demonstrate failure at the hygiene procedures during milking or storage of this product. At the assessment of contamination by coagulase positive staph, all of the researched samples presented high counts, suggesting the analyzed regions are endemic areas for *S. aureus*, alerting about the need of a higher control at the microbiological quality of produced milk mainly due to the risk of contamination by pathogenic and toxigenic bacteria, especially coagulase positive staph due to the fact it is a producer agent of enterotoxins resistant to pasteurization and involved in food poisoning outbreaks.

Keywords: Microbiological assessment, Raw milk, Refrigeration tanks.

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