TITLE: BACTERIAL ANALYSIS OF RAW AND PACKED MILK REALIZED AS A PRACTICAL ACTIVITY OF FOOD MICROBIOLOGY DISCIPLINE

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ABSTRACT:

Milk is considered one of the most complete nutritional food. It is a fundamental in the human diet, but it also serve as an excellent substrate for the growth of many microorganisms, including pathogens. Thus, milk quality becomes a constant concern, mainly due to the high risk of microorganisms that are related to outbreaks of food-borne diseases. The ideal quality for consumption of this product is directly related to the conservation and the microbial load of this food. The pasteurization of the milk aims to eliminate the pathogenic microorganisms and offer more security to the consumer. On the other hand, the commercialization of raw milk is more associated to several risks to human health due to the lack of norms and procedures that guarantee quality of the product. In view of the relevance of this product in the Brazilian food scenario and the hazardousness of the product without heat treatment, we evaluated the microbiological quality of raw and pasteurized milk marketed in the metropolitan region of the Fortalelza-Ce as a practical activity of the food microbiology discipline. Samples were collected from two different brands of pasteurized milk and raw milk from two different suppliers. The samples were transported in a thermal box to the microbiology laboratory. Fecal contamination indicators were determined by multiple-tube technique in a series of three tubes. For the presumptive test we used the lactosed broth with inverted Duhran tube and incubated at 37ºC/48 h. The confirmatory test of the total (TC) and thermotolerant (TT) coliforms was performed by transferring one side of the positive tubes into bright green broth (37ºC/48h) and EC broth (44.5ºC/48h) respectively. The most probable number (MPN) method was used for quantification. Among the samples of pasteurized milk, one brand presented contamination with TC of 9.2 MPN/ mL and TT ranging from 3.6 to 9.2 MPN/mL, while raw milk ranged from 20 to> 1,100 MPN/mL for TC and 460 to 1000 MPN /mL for TT. For pasteurized milk, TT should not exceed 4/mL. The variation between the samples may indicate failure to standardize the treatment of the product. For raw milk, there is no specific legislation, since marketing is not allowed by law. However, the high amount of TT indicates hygiene deficiency in the milk production process. Our results point to the need to mobilize official bodies responsible for supervising milk producers and raising awareness of the population that consumes raw milk.

Keywords: Microbiology Analysis, Pasteurized Milk, Raw milk

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