Microbiological and physicochemical evaluation of ground beef marketed in Mossoró, Rio Grande do Norte

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Ground beef is produced through the grinding of bovine meat cuts and constitutes a highly favorable environment for the development of microorganisms, because its presentation provides a larger contact surface when compared to the unground product. The contamination may occur from the moment of slaughter, throughout the grinding and handling processes, until storage, taking in consideration the extension and temperature of this last procedure. This work aimed to evaluate the microbiological and physicochemical quality of the ground beef commercialized in the town of Mossoró, RN. From local supermarkets, 29 samples were collected and underwent physicochemical analysis (pH and water activity) and microbiological surveys to determine the presence of *Salmonella* sp., *Staphylococcus aureus* and psychrophilic bacteria. We obtained the averages of 5.99 and 0.93 for pH and water activity, respectively. Concerning the microbiological analyses, the presence of *Salmonella* sp. was observed in 3 samples (10.37%), this result is above legislation standards which establish the absence of this microorganism. *Staphylococcus aureus* count showed variation between $2.5 \times 10^3$ cfu g$^{-1}$ and $2.5 \times 10^7$ cfu g$^{-1}$, on the other hand, psychrophilic bacteria count presented a minimum of $7.2 \times 10^3$ cfu g$^{-1}$ and a maximum of $2.5 \times 10^7$ cfu g$^{-1}$. The high counts of microorganisms found in the ground beefs analyzed indicate inadequate handling and conservation, representing risks to the consumers’ health, especially because *Salmonella* sp. and *S. aureus* produce enterotoxins responsible for food poisoning. Thus, it is evident the importance of the Good Manufacturing Practices to obtain safe products with acceptable microbiological quality.