

TITLE: MICROBIOLOGICAL QUALITY OF FRESH VEGETABLES SOLD IN FORTALEZA

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ABSTRACT:

The microbiological quality of fresh vegetables is a concern both for food safety and for the shelf life of the product. It is estimated that 30% of these products are lost due to microbial deterioration from harvest to consumption. In addition, outbreaks of food poisoning have been associated with the consumption of fresh vegetables. In this context, the aim of this study was to characterise the microbiological quality of selected common fresh vegetables commercially sold in Fortaleza - CE in order to provide insight into any potential health hazards associated with consumption of these commodities. A total of 33 samples collected from local supermarkets were analyzed for counts of aerobic mesophilic bacteria and lactic acid bacteria, enumeration of total and thermotolerant coliforms and presence of *Salmonella spp.* Aerobic mesophilic count ranged from 6.0 to 8.3 log cfu/g, with the lowest and highest counts recorded for chive and lettuce, respectively. The enumeration of total coliform occurred in 100% of the samples and the highest levels of contamination were found in chives and coriander, with more than 80% of the samples containing more than 5 log cfu/g. The enumeration of thermotolerant coliforms in the samples ranged from less 2 to 5 log cfu/g with the highest level in the chives. For all vegetable samples the mean counts of lactic acid bacteria ranged from 4.9 to 5.4 log cfu/g with no significant difference ($p < 0.05$) between the samples. Although *Salmonella spp.* was not detected in the samples analyzed in this study, the high counts of mesophilic aerobic bacteria and the presence of thermotolerant coliforms imply that effective control measures should be implemented to improve the microbiological quality of these fresh vegetables in the Fortaleza trade.

Keywords: coliforms, deteriorating bacteria, pathogenic bacteria, vegetables.

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