

TITLE: MICROBIOLOGICAL SOIL EVALUATION OF PUBLIC SQUARES IN COREAUCÉ

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ABSTRACT:

Coliforms are groups of bacteria belonging to the Enterobacteriaceae family, divided into Total Coliforms and Thermotolerant Coliforms. The presence of animals in recreation squares implies the manifestation of diseases caused by these microorganisms. This type of contamination may be transmitted by the soil contaminated by faeces, urine, hair and human waste, and children are the most vulnerable group due to geophagic habits. The objective of this work was to evaluate the occurrence of Total and Thermotolerant Coliforms in recreational soils located in public squares of the municipality of Coreaú-Ce. Four public squares were used for microbiological research, totaling 12 soil samples. The procedures presented were carried out in the Microbiology Laboratory (LABMIC) of the Universidade Estadual Vale do Acaraú - UVA, from August 2016 to March 2017. The microbiological analysis was carried out by determining the Most Probable Number (MPN) of Total Coliforms and Thermotolerant Coliforms through the multiple tube fermentation method. To identify species of the Enterobacteriaceae family, the ImVic test (Indole, Methyl Red, Voges-Proskauer and Citrate) was made. In the result, we can note the variation of Total Coliforms from 6.6×10^4 MPN/g to $> 1.6 \times 10^5$ MPN/g with an average of 9.9×10^4 MPN/g. For thermotolerant coliforms, the mean value was 8.4×10^4 MPN/g ranging from 2.2×10^4 MPN/g to $> 1.6 \times 10^5$ MPN/g. Ten species of Enterobacteriaceae family bacteria were isolated, including *Klebsiella pneumoniae* 18.4%, *Escherichia coli* 16.9%, *Enterobacter aerogenes* 13.8%, *Hafnia alvei* 12.3%, *Citrobacter diversus* 10.7%, *Proteus vulgaris* 7.6%, *Serratia liquefaciens* and *Proteus mirabilis* 6.1%, *Citrobacter freundii* and *Shigella sonnei* 3.0%. Therefore, it is necessary to have an effective legislation to establish sanitary and microbiological control of these places, ensuring the health of visitors, due to the insalubrity that these microorganisms cause, implying in infectious diseases.

Keywords: *Escherichia coli*, sanitary hygiene, Enterobacteriaceae, contamination

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