

## MICROBIOLOGICAL WATER EVALUATION OF THE SABIÁ DAM IN THE MUNICIPALITY OF MERUOCA, CEARÁ

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### ABSTRACT

Water is an essential element for the maintenance of life on Earth and is present in various segments of human life, which depends on the supply to achieve most of their daily activities. One way to ensure the supply of water during periods of shortage is by storing it in dams. The Sabiá Dam is the main source of water supply in the municipality of Meruoca and has vital importance in maintaining the quality of local life. However, having been built in an area once inhabited and that was expropriated due to its construction, the population is not sure of the quality of its water. Given the above, the present study was to evaluate the microbiological quality of Sabiá Dam water in the Municipality of Meruoca, Ceará. 4 samples from three different points of the dam were collected in the period from March to July 2015, a total of 12 samples. All samples were submitted to determine the Most Probable Number for Total Coliforms (TC) and thermotolerant coliforms (TTC), through the fermentation method in multiple tubes, and the quantification of mesophilic aerobic bacteria. The Most Probable Number of coliforms ranged from  $8,0 \times 10^1$  to  $> 1,6 \times 10^3$  CT / 100ml and the thermotolerant coliforms ranged from  $8,0 \times 10^1$  to  $9,0 \times 10^2$  TTC / 100ml. All the samples were infected to *Escherichia coli* and it was also verified the presence of microorganisms *Klebsiella pneumoniae*, *Serratia liquefaciens*, *Enterobacter aerogenes*, *Proteus vulgaris* and *Hafnia alvei*. The results for mesophilic aerobic bacteria ranged from  $1,2 \times 10^2$  to  $8,6 \times 10^4$  UFC / ml. The high levels recorded for total coliforms, thermotolerant coliforms and mesophilic aerobic bacteria are at odds with the tolerance limit set by Brazilian law. Therefore, the water of Sabiá Dam is unfit for human consumption thus indicating the need to urgently take measures and corrective nature conducting more analysis.

**Key words:** Sabiá Dam; Contamination; Total coliforms; *Escherichia coli*.