TITLE: MICROBIOLOGICAL WATER QUALITY OF THREE ARTESIAN WELLS LOCATED IN TWO MUNICIPALITIES OF THE NORTHERN REGION OF THE STATE OF CEARÁ

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ABSTRACT:

Drinking water is an indispensable natural resource for the human being, having relevant importance also in agriculture, livestock and industry. It is estimated that about 97.5% of the planet's water is found in the oceans and seas, being salty and inappropriate for consumption. Therefore, only 2.5% is freshwater found in polar ice caps, and less than 1%, distributed in the form of groundwater, rivers, lakes, soils, air humidity and biota, appropiate for human consumption. Due to the current water crisis, the drilling of artesian wells has become an alternative for the supply of large and small populations punished by drought and water scarcity. However, groundwater may also be contaminated by bacteria from the coliform group, which cause various enteric diseases, which are gram-negative, rod-shaped, aerobic or facultative anaerobic fermenting the lactose at a temperature of 35-37 ° C, producing acid , gas and aldehyde in a period of 24-48 hours. The diseases that are transmitted to the contaminated waters are numerous and their pathways of contagion happen mainly after the ingestion of the same. Therefore, the objective of this work was to evaluate the microbiological quality of the water from three different artesian wells, one located in the community of Palestina do Norte, Meruoca city, and the other two located in the municipality of Senador Sá-Ceará. The samples were collected from January to April 2017 and sent to the Microbiology Laboratory of Universidade Estadual Vale do Acaraú, totaling 9 samples. In the analyzed samples, was determined the Most Probable Number (MPN) of Total Coliforms (TC), Thermotolerant Coliforms (TTC), and quantification of aerobic mesophilic bacteria. The MPN for CT ranged from 0.43 to> 1.6 x 10^3 /100 mL. For TTC, the results ranged from 0.04 to> 1.6x10^3/100 mL, and the quantification of aerobic mesophilic bacteria ranged from 1.4x10^2 CFU /100 mL to 2.8x10^3 CFU /100 mL. According to the results, the water belonging to the three artesian wells is outside the standards established by current legislation, (Ordinance No. 2914/2011), therefore, inappropriate for human consumption.

Keywords: groundwater, potability, coliforms, diseases

Development Agency: FUNCAP