

**TITLE:** BACTERIOLOGICAL CHARACTERIZATION OF DRINKING WATER FROM SHALLOW WELLS AND MINES IN A SETTLEMENT IN LERROVILLE, LONDRINA – PR.

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## **ABSTRACT**

Drinking water may be obtained from different sources when there is not public water supply. Settlements usually seek alternative solution systems, being fueled by shallow well water or mines, sources that are mostly subject to contamination. Waterborne diseases are usually caused by enteric pathogens, among them diarrheogenic *Escherichia coli* (DEC), a major causes of gastrointestinal diseases. Considering the importance of researches about DEC, the present study aimed to evaluate the quality of drinking water through of the bacteriological determinations from shallow wells and mines in a settlement, located in Lerrovile, Londrina, Paraná State, Brazil. A total of 58 *in natura* water samples from 31 properties were studied and the methodology for total coliforms and *E. coli* research was the chromogenic substrate Colilert® (SOVEREIGN – USA). In addition, it was performed the genotypic characterization by the investigation of virulence genes (*eae*, *stx1* and *stx2*) of Enteropathogenic *Escherichia coli* (EPEC), Shiga-toxin producing *Escherichia coli* (STEC) and Enterohemorrhagic *Escherichia coli* (EHEC) using the technique of Polymerase Chain Reaction (PCR). Of the 58 samples, 54 samples were also analyzed with the purpose of comparing the quality water of the sources and the reservoirs of 27 properties, in order to verify possible contamination caused by the reservoirs. In the other properties, the samples were collected from the reservoir. According to the results, all the samples (100%) presented contamination by total coliforms and 36 (66.7%) by *E. coli*, however, virulence genes of the pathotypes studied in this work were not found. In the comparative evaluation, 10 (37.03%) samples showed a higher value of total coliforms in the reservoir and in 8 (29.62%) *E. coli*. The results achieved showed that the water consumed may be a potential vehicle of pathogens, thus the constant monitoring and adoption of preventive measures to treat sources of consumption may avoid waterborne diseases.

**Keywords:** settlement, quality water, *Escherichia coli*, total coliforms

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