TITLE: MICROBIOLOGICAL QUALITY EVALUATION OF WATER SAMPLES FROM THE RURAL AREA IN CAFEARA-PR.

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ABSTRACT:

Main challenges in the distribution of potable water in rural areas are lack of infrastructure, high cost, distance from urban centers and lack technical assistance. According to National Sanitation Information System (NSIS) 5.5 million Brazilian population do not have treated water in 2019. The population residing in areas chooses access to water through alternative systems, such as cisterns, dams or underground wells. However, these alternative water accesses are very susceptible to contamination by pathogenic microorganisms, which were highlight *Escherichia coli* specie, a bacterium often found in the gastrointestinal tract of humans and other animals. Although *E. coli* is part of the human gut microbiota, *E. coli* pathotypes that can pose a great health risk. Nevertheless, this microorganism can be a bioindicator of fecal contamination, which may indicate the presence of other potentially pathogenic microorganisms. Thus, the objective this work was to microbiological quality evaluation of 107 water samples from the rural area in Cafeara - PR. Colilert ® technique was used to demonstrate water quality, which detects and quantifies *E. coli* and total coliforms present in 100ml of water. Among 107 samples, 76 (71.03%) had total coliforms and 46 (60.53%) were positive for *E. coli*. The high number of contaminated samples highlights the importance of frequent inspection and using chlorinated or boiled water. Moreover, the importance to guide the rural population on the necessary precautions when using water from water wells, mines, reservoirs or other means that are susceptible to contamination. In addition, to the use of protection in the sources of supply, which enables the reduction of contamination. Then, we concluded that the types of water supply in the rural area are not completely safe for consumption and other anthropic activities and present a high risk to the health of the population and farm animals, given the possibility of contamination by microorganisms potentially pathogenic. Therefore, periodic monitoring of water quality should be carried out and possible sources of contamination should be mitigated.

Keywords: Colilert®; *Escherichia coli*; microbiology of water; total coliforms.

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