TITLE: EVALUATION OF THE PRESENCE AND QUANTIFICATION OF TOTAL COLIFORMS AND ESCHERICHIA COLI IN SAMPLES OF UNDERGROUND WATER INTENDED FOR HUMAN CONSUMPTION IN CENTENÁRIO DO SUL – PR

AUTHORS: SANTOS, N.G.N.; FAUSTINO, G; GUIDONE, G.H. M; LALA, S.R; MONTINI, V.H; NASCIMENTO, A.B; OLIVA, B.H. D; SANCHES, M.S; SILVA, L.C; ROCHA, S. P. D.

INSTITUTION: STATE UNIVERSITY OF LONDRINA, PARANÁ, PR (BLOCO 16, PORTAL DE VERSALHES III, LONDRINA - PR, CEP 86057-970, PARANÁ – PR)

ABSTRACT:

The main waterborne diseases are related to contamination by the Coliform group, which is divided into total and *Escherichia coli* (faecal Coliforms), in view of as they originate from the ingestion of contaminated water. Drinking untreated water infected with these pathogens can lead to infection of the intestinal tract, resulting in mild diarrhea or even serious risk. In rural areas where demand of the distribution system does not reach the population, it is common to use alternative solutions supply through groundwater source. Thus, the analysis of water quality is necessary, as it is very variable, since the groundwater that supplies the wells travels along paths through rocks and soils and may suffer fecal contamination during the journey. According to the Brazilian Ordinance GM/MS No. 888, of May 4, 2021 recommends that in 100 ml of water there should not be the presence of total coliforms and *E. coli*. The aim of this study is to analyze the amount of total coliforms and *E. coli* in water samples collected in the city of Centenário do sul - PR from well samples for groundwater collection. In order to carry out the analysis, 71 water samples from shallow and tubular wells were tested. For the evaluation of total coliforms and *E. coli*, the chromogen substrate Colilert® was utilized. Among the 71 samples tested, 31 (22.01%) were positive for total coliforms, with 20 (14.20%) being positive for *E. coli*. Given that there were high rates of bacteriological contamination, due to their underground origin, these sites are prone to contamination common to the proximity of the soil. One of the starting points for taking corrective actions is preventive maintenance and cleaning along with periodic analyses. In summary, it is extremely important that alternative supply solutions provide water with potable quality so that there are no serious problems in relation to local human health.

Keywords: analysis of water; water quality; *Escherichia coli*; subterranean water; Colilert®.

Development Agency: Coordenação de Aperfeiçoamento de Pessoal de Nível Superior