TITLE: MICROBIOLOGICAL QUALITY OF THE WATER FROM ARTESIAN WELLS IN THE WEST REGION OF PARANÁ, BRAZIL

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ABSTRACT:
The groundwater is the portion of water that remains in the subsoil and can be extracted through wells. Waterborne diseases are a challenge to the Ministry of health, where the countryside is a vulnerable region and provides for the appearance of it. The capture of water directly from wells and springs without treatment is a risk factor for human health. Water can affect human health in many ways, through direct ingestion, food preparation, personal hygiene, environmental hygiene, and industrial processes. In this way, it is of great importance the potability analysis for monitoring, seeking to assess the quality and risks for population´s health. In this context, monitor sources of supply, such as artesian wells is an important strategy to prevent the occurrence of waterborne diseases. This study evaluated the microbiological quality of water from artesian wells in the west region of Paraná, Brazil. For this, 28 samples of water were collected between March of 2017 and December of 2018, microbiological analyses being conducted regarding the research of total coliforms, *Escherichia coli* and thermotolerant coliforms second reference standard ISO 4831:2006 and ISO 7251:2005, respectively. The aerobic mesophilic microorganism's count was held according to reference standard ISO 4833-1:2013. The potability parameters used were based on Ordinance N. 2.914 of 12 December 2011 the Ministry of health. The results obtained showed 78.6% (22) of the samples analyzed were outside the microbiological standard stipulated by the current legislation; *E. coli* was present at 22.7% (5) of the samples in nonconformity with applicable standards. On the other hand, 21.4% (6) of the samples were in accordance with the law. Detection of coliform group microorganisms in water can indicate contamination from human and animal feces, that way; your presence suggests the possibility of having, on that site, microorganisms capable of causing disease. The percentage of samples in inconformity with microbiological standard established by Ordinance 2.914, demonstrates the importance of monitoring the microbiological quality of the well water intended for human consumption.

Keywords: Potability, sanitation, public health