

TITLE: WATER QUALITY OF THE MUNICIPAL LAKE OF CAMPINA DO MONTE ALEGRE, SÃO PAULO: PHYSICOCHEMICAL AND MICROBIOLOGICAL ASPECTS

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ABSTRACT:

The analysis and diagnosis of the physicochemical and microbiological parameters of water resources are fundamental for the understanding of this habitat, aiming the development of strategies for a better control of this place. The municipal lake of Campina do Monte Alegre, a small town located in the southwestern region of São Paulo, is artificial and was built in the 1980s by residents of the region. It served as a recreation area for the city's residents. Nowadays, it is possible to witness people who still swim in this lake but the presence of indicators of pollution and contamination of the water is clear. The parameters analyzed are particularly important, since they make it possible to determine the operation pattern of this ecosystem, besides providing useful information for the establishment of a monitoring plan. The objective of this work was to understand the spatial and temporal dynamics (seasonality) of the physicochemical characteristics of the water of Lake João Gomes, in different points and depths, besides evaluating the presence of total and thermotolerant coliforms and *Escherichia coli*. The determination of pH, temperature, dissolved oxygen, and turbidity was performed *in loco* using portable multiparameter equipment. Samples of water from the three points were collected monthly, stored in thermal boxes and immediately transported to the Laboratory of Microbiology where the analyzes were performed for the presence of total and thermotolerant coliforms and *E. coli*. The values obtained by the physicochemical parameters did not change significantly as a function of the sampling point as well as of the month analyzed. The presence of high rates of thermotolerant coliforms and *E. coli* indicates presence of other pathogenic microorganisms in the lake. The values found are higher than allowed by drinking water and recreational legislation. Therefore, it is necessary that remediation techniques be used, with the intention of reducing these values to legal limits.

Keywords: Water quality, monitoring, indicator bacteria, *Escherichia coli*.