DETECTION OF COLIFORMS IN GROUNDWATER AND ITS ASSOCIATION WITH IRON AND MANGANESE BACTERIA

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ABSTRACT

Presence of coliform in the groundwater of Bacoor, Cavite and its association with iron and manganese bacteria were investigated in this study. Physico-chemical parameters of water such as pH, temperature, biological oxygen demand (BOD), and dissolved oxygen (DO) were also measured in order to determine its effect on the presence of bacteria in the groundwater. In the study, coliform, and iron and manganese bacteria were isolated and grown from their respective media and was then confirmed by API kit. Mixed culture experiment, and Miles and Misra method for the viable counting were used. Multiple correlation of linear regression with 5% significance level was the statistical tool used in the research. Results revealed that physico-chemical parameters measured only have small differences in their values yet higher values were observed to samples with the presence of the three bacteria. Coliforms were present in ten samples of groundwater while iron and manganese bacteria were positive to only two samples. No correlation was observed between coliforms and iron bacteria (p>0.05) while there is significant correlation between coliforms and manganese bacteria (p=0.0021).

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