E. coli as a Microbiological Indicator of the Water Quality in the Reservoirs of Patillas and Carite

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The area of the Patillas water reservoir is highly populated, there is a lot of agricultural and livestock activities and there is no sewage system, on the other hand, the surroundings of the Carite water reservoir are protected and isolated. The purpose of the investigation was to identify which of these two water reservoirs has less presence of E.coli bacteria. The hypothesis of this study was: “Raw water from Carite Reservoir will present less concentration of E.coli bacteria than Patillas Reservoir”. The samples were collections of 2,250 milliliters from the center of the reservoir at a depth of 3 meter. The physical and chemical parameters of water quality such as: pH, turbidity and dissolved oxygen were measured in November 2014 and in February 2015. Patillas water pH values were (6.35 and 6.79) and Carite Reservoir had (8.87 and 6.82). Both reservoirs evidenced a neutral value in the turbidity and dissolved oxygen. On the Standard Qualitative Analysis of Water in the presumptive test in lactose broth with inverted Durham tubes, the Patillas Reservoir samples reflected, in two occasions, 15 of 15 positive to total coliforms. The Carite Reservoir samples obtained 10 of 15 and 7 of 15 positive to total coliforms. In the EMB Agar Plates, Patillas samples was covered entirely with a metallic green color evidencing the presence of E. coli bacteria, while the Carite samples presented little amount of metallic green. It can be concluded that Carite’s water had less fecal contamination and the best quality of raw water.

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