TITLE: INFLUENCE OF PRECIPITATION IN THE DYNAMICS OF *ESCHERICHIA COLI* OF THE BEACHES OF THE COAST OF SALVADOR-BA, BRAZIL

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ABSTRACT:
In view of the precariousness of basic sanitation services on the coast of Salvador-BA, it is estimated that the occurrence of rainfall has contributed to the deterioration of water quality for balneability purposes. In this sense, this research aims to evaluate the influence of precipitation on the *E.coli* densities of the beaches located on the coast of Salvador-Ba. For this purpose, the pluviometric monitoring and balneability data provided by the Institute of Environment and Water Resources of the State of Bahia, regarding 2017 and 2018. To evaluate the dependence of the variables, the Correlation Coefficient Linear de Pearson (r) between the individual volume precipitated in 16 pluviometric stations in the period before one and two days from the date of collection and the *E.coli* densities of 36 beaches. In the first moment the results of the correlations were validated following the criterion $r \geq 0.30$ and with $p \leq 0.05$. Then, the contribution of precipitation by the position of the pluviometric stations in the hydrographic basins (drainage) of Salvador-Ba was evaluated. The results indicated the influence of precipitation on the *E.coli* densities of 17 beaches, such as: penha 1, pedra furada 1, periperi 1, canta galo 1, farol da barra 2, ondina 2, rio vermelho 1, rio vermelho 2, buracão, amaralina 1, amaralina 2, pituba 2, armação 2, corsário 1, piatã 1, placafor 1 and itapuã 1. In 2017 the highest correlation ($r = 0.56$) was obtained with the precipitate one day before the date of collection at the station são caetano with *E.coli* levels of amaralina 1 beach. With $r = 0.67$, in the year 2018, the highest correlations were obtained with that registered in the cabula station two days before the collection with the *E.coli* densities of the beaches of armação 2 and rio vermelho 1. In general, in the studied period the correlations were varying in the moderate range. It is concluded that the existence of sources of continuous pollution has corroborated the results. Thus, this research elucidates that the influence of precipitation on the dynamics of *E.coli* is due to factors such as the conditions of basic sanitation present in the middle and urban drainage.

Keywords: balneability, beach, *E.coli*, precipitation