

Title: EVALUATION OF MICROBIOLOGICAL QUALITY OF SANDS OF BEACHES MUNICIPALITIES OF VITÓRIA AND VILA VELHA, ES.

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Review:

The beaches provide the most sought after destination for leisure activities, and sand is a particle accumulator element. The sandy sediment that is influenced by sewage is the potential vehicle for the transmission of pathogenic microorganisms, which may compromise the health of the bather. Currently, the evaluation of bathing beaches in Brazil is carried out only with the monitoring of water, not including the quality of the sands. The objective of this study was to evaluate the microbiological quality of the sand of the beaches of Vitória and Vila Velha, Espírito Santo State. This study was conducted at the most frequented beaches of the city of Vitoria and Vila Velha, in eight sampling stations, with 18 collection campaigns on monthly basis during the period of October/ 2013 to April/ 2015. Collection procedures, transport and analysis were performed according to the standards set by *Standard Methods for the Examination of Water and Wasterwater* and CETESB, using parameters as indicators of Enterococcus bacteria, *Escherichia coli* and thermotolerant coliforms. According to the results acquired, the enterococcus parameter had the highest scores among the three surveyed indicators. The sand with the best health quality is the Praia da Costa beach and Itapuã beach located in Vila Velha, with Enterococcus average of 374 CFU/ 100g and 195 CFU/ 100g, respectively. And the beaches who presented unsatisfactory quality was the Curva da Jurema beach located in Vitória, with Enterococcus average concentration of 8549 CFU/ 100g, and Camburi beach (Station 3) with Enterococcus average concentration of 5460 CFU/ 100g. The results were compared with the maximum permissible values recommended by the Association of European Blue Flag. From the results it was found that the sands of Vitória's beaches are under strong influence of sewage and can pose risks to bathers.

Keywords: bathing, sand, *Enterococcus*, thermotolerant coliforms, *Escherichia coli*.

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