

CONTAMINATION OF SAND AND WATER OF BEACHES IN THE COAST OF WHALES IN THE SOUTHERN END OF THE BAHIA STATE, BRAZIL

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Abstract

Water is one of the main vehicles for infectious and parasitic infections. However, beach sands also represent an important means of disease transmission. The present study evaluated balneability of sands (dry and wet) and of the water of beaches in the municipalities of Alcobaça, Caravelas, Mucuri, Nova Viçosa, and Prado, on the coastal region called Coast of Whales in the southern end of the Bahia state, Brazil. The following microbiological indicators of contamination were evaluated: thermotolerant coliforms, enterococci, filamentous fungi and yeasts. The microbiological analyses were carried out based on the Standard Methods for the Examination of Water and Wastewater. Regarding thermotolerant coliform counts in water, all sites sampled were appropriate to bathing. Of these, 70% were considered to have excellent balneability conditions, 20% were very good, and 10% were inappropriate. However, when water enterococci counts are considered, all beaches are improper for bathing, meaning that primary contact of humans and these sites should be avoided. Only two beaches had thermotolerant coliform counts above the acceptable limit in dry sands. In turn, most beaches presented enterococci counts above acceptable thresholds in sands. Enterococci counts were within acceptable limits in the wet sands of only three beaches. As a rule, wet sands exhibited lower fungus counts, compared to dry sands. The waters and sands of the beaches sampled presented high enterococci counts, indicating that they are improper for bathing. The high levels of contamination observed in the present study, mainly of enterococci, point to the need for informing the population of the risks of infectious disease transmission. The results also highlight the importance of prevention measures to decrease contamination levels in these beaches.

Keywords: Sand, Water, Coliforms, Balneability, Enterococci.

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