PREVALENCE AND DIVERSITY OF *VIBRIO* SP. FROM DIFFERENT SOURCES IN MARINE ENVIRONMENT AT AGADIR AND ESSAOUIRA (MOROCCO)

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ABSTRACT

Introduction: The Moroccan coast is characterized by highly diverse ecosystems and plays a key role in the national economy. However, it is subject to numerous disruptions caused by human activities and sewage discharges to the marine environment, which constitute an important problem faced by public health and environmental managers, and exerts great economic and social impact on shellfish-producing areas.The objectives of this investigation were: (i) to isolate species diversity of vibrios from marine environment at Agadir and Essaouira (ii) to evaluate performances of ChromAgar Vibrio.

Materiel and Methods: A total of 20 samples, including three compartments (seawater, shellfish and sediments) were examined over five months (from April to August 2010). Vibrio was investigated using the provisional protocol for detection of pathogenic vibrios in sea products was developed by the National Reference Center of Vibrios and Cholera at Pasteur Institute (Paris, France), the Laboratory of Studies and Research in Environment and Health at National School of Public Health (Rennes, France) and the Laboratory of Studies and Research on Fishery, the AFSSA-Site Products of Boulogne (Boulogne-sur-Mer, France). This protocol includes: sample preparation, enrichment, isolation, purification and identification of isolates recovered. In brief, 25 gram portion of sediment or shells sample was homogenized in 225 ml of alkaline peptone water (APW), for 1 min using a food homogenizer (Stomacher). The homogenate was then incubated at 37 °C for 18 h. This was then transferred to streak on Thio-sulphate-Citrate-Bile Salt-sucrose (TCBS) agar plate, and in ChromAgar *Vibrio*, followed by incubation at 37 °C for 18-24 h.

Results: From a total of 156 strains were isolated on ChromAgar medium, 145 strains were identified as *Vibrio* species and correspondent to four species. The results showed high prevalence of *Vibrio alginolyticus* with a rate of 81%, followed by *V. cholerae* (10%), *V. parahaemolyticus* (8%) and *V. mimucus* (1%). The investigation of the different compartments showed the highest prevalence of *Vibrio* in water with 38%, following by shellfish and sediments with 32% and 30% respectively.

Conclusion: The isolation of some potential pathogenic *Vibrio* species highlights the importance of the investigation of *Vibrio* to estimate water quality and to mitigate the transmission of human and animal pathogens. The preliminary results of this study show high distribution of *V. alginolyticus* in seawater, and high performance of ChromAgar *Vibrio* for the isolation of *V. cholerae* and *V. parahaemolyticus*.

Keywords: ChromAgar *Vibrio*, Morocco, Shells, Sediment, *Vibrio sp*.