BIOACCUMULATION OF NICKEL AND VANADIUM BY CLAMS (MERETRIX-MERETRIX) LIVING IN DIFFERENT SALINITIES ALONG THE SAUDI COAST OF THE ARABIAN GULF

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Summary

The objective of this study was to investigate bioaccumulation of nickel (Ni) and vanadium (V) in clams living in different salinity regimes along the Saudi coast of the Arabian Gulf. Several hundred clam (Meretrix meretrix), sediment, and seawater samples were collected from 12 locations. Concentrations of Ni and V were determined in these samples using an inductively coupled argon plasma analyzer. Concentrations of Ni and V in the clams varied between 0.35 and 2.61 mg kg-1 and between 0.13 and 0.35 mg kg-1 wet tissue, respectively. Analysis of variance of the data revealed significant ($P < 0.01$) inter- and intra-station variations in Ni concentrations in clams. In contrast, the mean concentration of V in clams from all the stations were statistically similar. Correlation between the biometric characteristics of clams and Ni and V concentrations were not statistically significant. Significant ($P < 0.05$) geographical variations in Ni and V concentrations in the sediment samples were found, with relatively higher concentrations in the northern part of the Gulf where there are many oil fields. Ni and V in the sediments were significantly ($P < 0.05$) correlated, suggesting a common contamination source for these elements. Interactions between Ni and V in clams and sediment were poor.

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