Polycyclic Aromatic Hydricarbon (PAHs) in Sediments and Rockyshore Oysters *(Saccostrea cucullata)* in Intertidal Area of Boushehr State (Persian Gulf)

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Abstract

The polycyclic aromatic hydrocarbons (PAHs) are pollutants of concern due to their persistent in the marine ecosystem, and their cause long-term adverse effect to the marine life. In this study, of concentrations of 14 PAHs and their sources in the rocky shore oysters (Saccostera cucullata) and in the sediments of boushehr province were determined. The rocky shore oyster was selected due to its wide distribution and its role in the diet of Boushehr coastal area. The sampling and analysis were perfprmed in july 2009. Samples were collected from four rockyshore stations, Genaveh , Boushehr, Dayer and Nyband Gulf. Collected samples were immediately transferred to hexane rinsed glass jars with aluminum foil inserts and transported in dry ice to the laboratory of PGRSC and kept frozen at -20°C prior to analysis. An aliquot of the samples were taken for dry weight determination. The tissue was dried with anhydrous sodium sulphate and soxhlet, then extracted for about 8 hours using dichloromethane: hexan (1:1v/v). The extract was then charged to 1st step and 2nd step column chromatography to fractionate hydrocarbons.The sediment samples were extracted with the same method, except using dichloromethane for soxhlet extractor. The fractions were analyzed by gas-chromatography/mass spectrometry (GCMS). The recovery of PAHs were more than %65. The total concentration of PAHs in oysters ranged from 146.9 to 268.1 ng/g Dry weight, while sediment concentration ranged from 41to 227.6 ng/g dry weight. Boushehr rockyshore oyster that did not present very high levels of contamination expressed low PAHs ratio. Total lipid in station 2 was higher than others. The significant correlation was observed between total lipid and total PAHs $p \leq 0.05$. Both pyrolitic and petrogenic PAH are present in all oyster and sediment samples.

Keywords: *Boushehr, PAHs, Persian Gulf, Saccostrea cucullata, Sediments*