

Bioaccumulation of Polycyclic Aromatic Hydrocarbons in *Padina boryana* Alga Collected from a Contaminated Site at the Red Sea, Saudi Arabia

Authors : Huda Qari, I. A. Hassan

Abstract : The brown alga *Padina boryanawas* was used for bioassay of polycyclic aromatic hydrocarbons (PAHs) accumulation at the seashore of Jeddah city. PAHs were determined in the coastal water and algal tissues by GC-MS. Acenaphthene (Ace) and dibenzo (a,h) anthracene (dB(a,h)An) were the main PAHs in seawater (50.02 and 46.18) and algal tissues (64.67 and 72.45), respectively. The ratios of low molecular weight/high molecular weight hydrocarbons (1.76 - 1.44), fluoranthene/pyrene (1.57 - 1.52) and phenanthrene/anthracene (0.86 - 0.67) in seawater and algal tissues, respectively, indicated the origin of the PAHs to be mainly petrogenic. This study has demonstrated the utility of using *Padina boryanawas* as a biomonitor of PAH contamination and bioavailability in the coastal waters.

Keywords : polycyclic aromatic hydrocarbons, *Padina boryanawas*, bioaccumulation, waste water

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