Source discrimination of PAHs in industrial soil of the Persian Gulf Coast

ABSTRACT

The purpose of this study is to use environmental fingerprinting technique and to identify oil spills and their relationship with the oil derived from known oil fields. This is the first comprehensive study on PAHs distribution as oil spill markers in the Persian Gulf to investigate petroleum contamination in soil. Soil samples (0ï 10 cm) were collected from industrial zone. The results indicated that total PAHs range from 460 to 1730.4 ng.gī 1 for industrial soil. Polycyclic aromatic hydrocarbons in industrial area showed high concentration and it is associated with petrogenic input as these sites are located near gas and oil fields. Analysis of the results and application of biomarker ratios such as MP/P ratio showed that the main source of PAHs input is petrogenic sources. Analysis of all samples showed that contamination in the study area is derived from direct inputs of petroleum products and crude oil.

Keyword: PAHs; Industrial soil; Molecular markers; Persian Gulf