

N-Alkanes and polycyclic aromatic hydrocarbons (PAHs) profile of soil from some polluted sites in Niger Delta, Nigeria

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Abstract

Soil samples were collected at different locations from Etche and Obio Akpor local government area (LGA) of River State in Niger Delta. The n-alkane and polycyclic aromatic hydrocarbons were determined qualitatively and quantitatively using GC-FID. The concentration of PAHs in the soil samples ranged from 7.40 to 78.3 ng/g. The highest concentration of PAHs was recorded in Agbada 1 flow station, while the lowest concentration was recorded in Agbada 2 flow station. A significant level of pollution was also observed in the soil of Bomu pipeline at Obio Akpor LGA. Also, the distribution of n-alkanes in the samples was also used to assess the level of pollution in the studied area. Various n-alkanes and PAHs ratios were obtained to know the major source of pollution in the area under study. The main source of pollution was pyrolytic, which might be due to the gas flaring activities going on in the study area. Also, the results showed that n-alkanes could also be a complementary tool in assessing pollution and source apportionment.

Keywords: PAH, GC-FID, Gas flaring, Pyrolytic
