ABSTRACT

Petroleum Hydrocarbons in oil spilled soil have different penetration and distribution differentials. Contamination of soil and water from petroleum spill is a recurrent environmental problem in recent times. Penetration and migration of C10 − C26 and C26 − C34 hydrocarbons through the soil layers were assessed by multivariate analysis to determine the spatial distribution and chemical similarity of these compounds over the polluted area. Samples were analyzed using gas chromatography equipped with flame ionization detector(GC-FID). It was also found that total petroleum hydrocarbon concentrations were varied from 7 − 343 ± 5mg kg−1 top soil, 12 − 296 ± 2mg kg−1 subsoil and 5 − 187 ± 9 mg kg−1 at the greatest depth measured. The results indicated high levels of total hydrocarbon contents when compared with the controlled samples. This work provides informative guidelines to the remediation processes, control of spills and the need to conduct more post spill studies.

Keywords: Petroleum Spillage, Total hydrocarbons, Cluster analysis, and GC- FID.