INFLUENCE OF RAINFALL ON THE LEVELS OF COLLOID AND SEDIMENT BOUND POLYCYCLIC AROMATIC HYDROCARBONS IN BOLGODA LAKE, SRI LANKA.

K.A.S. Pathiratne and O.C.P. De Silva

Department of Chemistry, University of Kelaniya, Kelaniya, Sri Lanka

Polycyclic aromatic hydrocarbons (PAHs) constitute a group of ubiquitous environmental pollutants. PAHs are released to the environment mainly during incomplete combustion of fossil fuels and pyrolysis of organic matter at high temperatures. Concerns of PAHs have been growing due to their potential carcinogenicity and mutagenicity. The present study was carried out to evaluate the influence of rainfall on colloid and sediment bound PAH contents in Bolgoda Lake. The colloid and sediment samples were collected during the period 2003-2004 from six selected sampling sites of the lake during the long dry periods and one day after heavy rainfall to the area during the dry period. PAH contents of the samples were determined using high performance liquid chromatography. Results revealed that the levels of naphthalene, phenanthrene, pyrene, chrysene, benzo(k)fluoranthene and dibenz(a,h)anthracene in the colloids and sediments of the lake collected after rainfall were significantly higher than those collected during the dry periods. The high levels of PAH in Bolgoda Lake after heavy rainfall could be due to urban runoff brought into the lake from land with heavy rain.