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Distribution of Heavy Metals in the Sediment of Yamuna River Agra, India

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ABSTRACT

Yamuna, a tributary of river Ganga, flows northeastern part of Agra, get contaminated with various pollutants introduced by various drains of Agra city. These pollutants adsorbed on the sediment, which reflects the current quality of the water system. In the present study, impacts of heavy metals on the sediment chemistry in three different seasons (winter, rainy and summer) were investigated. For this, 12 sediment sites were chosen and 9 metals (Cu, Cr, Cd, Co, Pb, Ni, Zn, Mn and Fe) were analyzed with Atomic Absorption Spectrometer (AAS). Present observation revealed high concentrations of metals in rainy season followed by summer than winter. Higher concentration of contaminants during rainy season could be due to heavy discharge of pollutants coming from various openings in to the river. The higher concentration of Fe (13,950–45,627 mg/kg) in summer (13,691–46,461 mg/kg) in rainy and (14,023–42,961 mg/kg) in winter may be due to the large number of iron foundries present in Agra. Based on geo accumulation index and sediment pollution index, quality of river sediment regarding as being moderately to highly polluted and suggesting a need for managing sediment quality of the river Yamuna.