**Abstract**

Kuruchi Lake is an important freshwater body of Coimbatore City, Tamil Nadu, India. This lake receives municipal wastes and industrial effluents which contain heavy metals. Therefore, the present study was aimed to investigate the status of physicochemical properties and heavy metal levels in surface sediments of Kuruchi Lake. The result of physicochemical parameters such as pH, Electro Conductivity (EC), chloride, calcium, magnesium, phosphate, sulphate, sodium, potassium, total nitrogen, iron, total alkalinity and total organic carbon concentrations were found to be higher in sediment sample of station 4. The heavy metals concentration showed variations with Cd 4-14 mg/kg, Cr 2295-3198 mg/kg, Cu 872-1199 mg/kg, Ni 964-1520 mg/kg, Mn 4996-5820 mg/kg and Pb 999-1489 mg/kg, respectively. The highest concentrations of Cr, Pb, Ni and Cu were found to be higher in station 4, when compared to other study stations. Cd and Mn levels were found within the normal range. The cluster analysis was used for determining the similarity of heavy metals concentrations in different study stations. This study reveals that sediments of Kuruchi Lake were partially polluted with heavy metals. This study provides the baseline data for future sediment quality assessment of this lake and regular monitoring of sediment quality in this lake is highly recommended.