



Assessing Heavy Metal Contamination in Urban Soils - An Index Analysis Approach

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ABSTRACT

Traffic cum industrial site soil collected from Dindigul Town were analyzed for zinc, copper, lead, cadmium and chromium using Atomic Absorption Spectroscopy and assessed contamination levels of heavy metals on the basis of contamination factor, Enrichment factor and Ecological risk factor . Eight integrated indices were divided into two groups. One group is suitable for the normal distribution single indices, including the sum, average, weight average, vector modulus and Nemerow pollution indices and other for log-normal distribution including the product, root of product, and weighted power product pollution indices. The calculated results of contamination factor was found to be less than 1 in all the 18 sampling sites indicating that these sites have low contamination factor of these heavy metals. The Ecological risk factor for all the 18 sampling sites and for all the metals were found to be less than 40 indicating the low potential ecological risk. The Enrichment factor for Zn, Pb and Cd were found to be 2-5 which indicate that the soil is moderately enriched with Zn, Pb and Cd. The Cr enrichment factor is found to be greater than 5 indicating significant enrichment of Cr. The results of the pollution index show that the soil is enriched with Zn, Pb and Cd. The industrial site soil is much enriched with Cr. The urban soil Dindigul Town is found to be polluted.

Keywords: Ecological risk factor, Enrichment factor, Contamination factor, Heavy metals, Pollution indices, Atomic Absorption Spectroscopy.
