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Assessing heavy metal contamination of road side soil in urban area

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ABSTRACT:

Environmental pollution of heavy metals from automobiles has attained much attention in the recent past. The pollution of soil by heavy metals is a serious environmental issue. Heavy metals are released during different operations of the road transport such as combustion, component wear, fluid leakage and corrosion of metals lead, cadmium, copper and zinc which are the major metal pollutants of the road side environment. The present research is conducted to study heavy metal contamination in road side and industrial soil of Madurai city. The soil samples are collected from three sites and analyzed for six heavy metals (Pb, Cu, Cr, Zn, Ni and Cd). Their concentration and distribution in different depths (0 cm, 5 cm and 10 cm) were determined. Heavy metal contents were analyzed by Atomic Absorption Spectroscopy (AAS). The studies with Enrichment Factor (EF) indicate that lead has been enriched to quite great extent while the Normalized Scatter Coefficient values (NSC) indicate faster enrichment of cadmium. The level of heavy metals in road side soils were higher as compared to their natural background levels. The results revealed that the heavy metals are harmful to the road side vegetation, wild life and the neighbouring human settlements.

Keywords:
Pollution, combustion, heavy metal enrichment, road side soils, enrichment factor, Normalized scatter coefficient value, environmental pollution.