

Investigation of Lead Concentration in Road Dust Samples in Kiribathgoda Area, Sri Lanka

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Heavy metal contamination has become one of the major problems in metropolitan cities all around the globe. Kiribathgoda area in Sri Lanka is one such hot spot. Anthropogenic activities have resulted in the increment of heavy metal levels in the earth's crust. Analysis of outdoor dust is a useful technique to determine the heavy metal content in an urban area and thereby predict the extent of air pollution. This could open opportunities to relate the threat for human health by such toxic heavy metals in an unhealthy environment. This investigation was carried out by selecting a section from the main road of Kandy-Colombo in Kelaniya area. Ten sampling sites were selected and samples were collected as triplicates for three consecutive months. Their pH level and organic matter content were tested. Also, concentration level of the heavy metal Pb was determined using atomic absorption spectroscopy. The preliminary factors that favor the persistence of heavy metals in the environment were investigated and analyzed. It was observed that slightly acidic (pH 5.89 ± 0.41) dust favor Pb deposition. The Pb content was found to be fluctuating around 22.01-84.52 mg kg⁻¹. A good positive correlation (Correlation Coefficient 0.878) was observed in between Pb- Organic matter. It was evident that Pb exists in the environment for a very long time but their escape from nature is very slow. Hence it is necessary to study and understand the health risks associated with heavy metal toxicity on future studies developing from the findings of this research that will benefit the mankind.

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