

Lead pollution in road side dust in selected locations in Matara district

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Road dust pollution of Pb due to mobile or stationary sources such as vehicular emission, industrial plants, power generation plants, oil burning, waste incineration etc. is a recent health hazard in urban areas. Therefore, this study was focused on analysing road side dust in order to evaluate the Pb pollution at different locations in Matara district. The samples were collected in September, 2016 from each site under similar weather conditions and digested with conc.HNO₃ acid Pb was determined using atomic absorption spectrophotometry. The limit of detection and quantification for the method were 0.02 mg/L and 0.106 mg/L respectively under the acceptable accuracy level of the analytical method (90%). The concentration of Pb at 60 sites in Matara urban area varied between 6.31 – 15.00 mg/kg. The lowest Pb concentration (1.75 mg/kg) was observed at Aperakka area which can be considered as rural and the highest value (15 mg/kg) was observed in Matara urban area that confirmed the effect of automobile emissions combined with possible other sources contributing to Pb pollution. The ranges of concentration were observed as 1.75 – 6.50, 4.50 – 10.20, 3.50 – 9.50 mg/kg respectively at Aperakka, Dondra and Gandara areas. Since, there was a significant difference of Pb concentration in the road dust samples there could be sources of Pb emissions at certain areas. However, the concentrations of Pb in the road dust samples were considerably lower than in other areas (Colombo) of Sri Lanka, and that could be due to short history of urbanization, and industrialization in Matara district.

Keywords: road dust, lead pollution, atomic absorption spectrophotometry.

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