



Physicochemical Analysis and Trace Metal Levels of Rain Water for Environmental Pollution Monitoring in Ile – Ife, Southwestern Nigeria

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Abstract: Physicochemical analysis of freefall rain water samples in Ile-Ife was carried out to determine the anthropogenic contribution to the chemical properties of rain water in Ile-Ife. The levels of Pb, Zn, Cd, Na, K, Cu, As, Fe, Cl⁻ and Si were determined using Atomic Absorption Spectrophotometer (AAS). The mean levels of the elements ranged from less than 0.01mg/l for Zn to 46.01mg/l for Cl⁻. A comparison of the elemental concentrations with WHO guidelines showed that with the exception of As and Pb limits, the level of all other elements investigated were below the WHO maximum allowable concentrations. Factor analysis revealed that four major factors are contributing to the elemental composition of rain water in Ile-Ife. They are biomass/residential wood combustion, refuse incineration, road dust, and vehicular activities.

Keywords: *Rain water, Physicochemical analysis, WHO regulations, Water Pollution monitoring*

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