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HEAVY METAL CONTAMINATION OF AMARANTHUS GROWN ALONG MAJOR HIGHWAYS IN LAGOS, NIGERIA

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ABSTRACT

Consumption of food contaminated with heavy metals is a major source of health problems for man and animals. Vegetable cropping along major highways with heavy vehicular movement has been a serious concern to food safety experts in large cities. A study was, therefore, carried out in two major highways in Lagos, Nigeria to determine the extent of lead (Pb) and cadmium (Cd) contamination in vegetable tissues. Samples of soil and plant (*Amaranthus viridis*) were collected from three sites; two of which were located on major highways, and another in a rural area which served as the reference site. These samples were collected at distances of 5, 10, 15 and 20 m from the roadside and analysed for Pb and Cd. Levels of Pb and Cd in soil were found to be 47 to 151 mg kg^{-1} and 0.30 to 1.33 mg kg^{-1} (dry weight) respectively. Concentrations in leaves ranged from 68 to 152 mg kg^{-1} and 0.5 to 4.9 mg kg^{-1} (dry weight) for Pb and Cd, respectively. The pattern of these heavy metals deposition, as reflected by the plant concentration factor (PCF) values, showed decrease in concentration with increase in distance from the road. Heavy metal concentrations in *Amaranthus* cultivated on soils characterized by heavy traffic were significantly higher ($P \leq 0.05$) than those cultivated on the reference soil. These findings in general indicated that while the levels of metals in soil were within the critical limits proposed by Kabata-Pendias and Pendias (1984), the range within the plant leaves were above the normal limit for plants suggesting that amaranthus has away of concentrating metals in their tissues and or that aerial deposition may be a major source of contamination.

Key Words: *Amaranthus viridis*, cadmium, lead, pollution load index