

**LEVELS OF CADMIUM, ARSENIC AND LEAD IN SELECTED
VEGETABLE AND WATER SAMPLES IN MEDAWACHCHIYA AND
IPALOGAMA DIVISIONAL SECRETARIATS, ANURADHAPURA
DISTRICT OF SRI LANKA**

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Chronic Kidney Disease of unknown etiology has become a major health issue among farmers in Sri Lanka especially in North Central Province. The causative factor(s) and exact mechanism leading for this disease is still debatable. In many published literature, heavy metals have been reported to cause this disease and consumption of contaminated foods with heavy metals are reported to be responsible for development of the disease. Hence, present study aimed to determine levels of Cadmium (Cd), Arsenic (As) and Lead (Pb) in common low country vegetables and drinking water samples from an endemic and a non-endemic area; Medawachchiya and Ipalogama. Samples of vegetables including okra (*Abelmoschus esculentus*), brinjal (*Solanum melongena*), long bean (*Vigna unguiculata*), cucumber (*Cucumis sativus*) and luffa (*Luffa acutangula*) and samples of water were randomly collected from each site, and the sample size for each vegetable and water was 15 and 20 respectively. The samples were prepared using the standard procedures and analyzed for heavy metals by using an Atomic Absorption Spectrophotometer. The results revealed that, in all the samples, levels of the studied heavy metals were lower than that of the recommended maximum permissible levels by the World Health Organization. Arsenic was not detected in any vegetable sample collected while all the drinking water samples contained Arsenic. There was no significant difference ($p > 0.05$) of As, Pb and Cd in drinking water between the endemic and the non-endemic areas. Long bean and luffa collected from the endemic region showed significantly higher level of Cd while okra collected from the endemic region showed significantly higher ($p < 0.05$) level of Pb compared to the non-endemic region. The research study concludes that, the mean levels of all heavy metals studied in water samples and the mean levels of cadmium in studied vegetable samples were higher in the endemic area than the non-endemic area.

Keywords: Drinking water, Endemic and non-endemic regions, Heavy metals, Vegetables