

## DETERMINATION OF SELENIUM CONTENT IN CONVENTIONAL LEAFY GREEN VEGETABLES CONSUMED BY SRI LANKANS

A.G.S. Dayarathna

Postgraduate Institute of Science, University of Peradeniya, Peradeniya, Sri Lanka

Selenium is an essential micro-nutrient for both human and animals that specifically incorporated as amino acids. It is an important trace element in human for proper thyroid function and promotes their immunity system. Most of South Asian countries specially Sri Lankan people frequently consumed plant-derived foods. This study was carried out to determine the selenium content in seven conventional leafy green vegetables that consumed by Sri Lankans. *Centella asiatica* (Sin. Gotukola), *Alternanthera sessilis* (Sin. Mukunuwenna), *Basella alba* (Sin. Nivithi / Spinach), *Boerhavia diffusa* (Sin. Sarana), *Ipomoea aquatica* (Sin. Kankun), *Amaranthus spinosus* (Sin. Thampala) and *Hygrophila schulli* (Sin. Neeramulliya) are the leafy vegetable samples that used to evaluate selenium content. These samples were collected from five districts; Gampaha, Kandy, Kurunegala, Anuradhapura and Puttalam which have different environmental and climatic conditions. Soil samples corresponding to each leafy vegetable samples were collected, and analyzed to identify a relationship between the selenium content in plants and soils.

The analysis was done by Hydride Generation Atomic Absorption Spectrophotometer (HGAAS). Prior to the analysis leafy vegetable samples and corresponding soil samples were subjected to acid digestion with nitric acid. Selenium concentration in leafy vegetable samples was reported within the range of 31.2 – 103.2  $\mu\text{g kg}^{-1}$  in dry weight basis. *Centella asiatica* and *Hygrophila schulli* varieties show relatively higher selenium concentrations, while *Hygrophila schulli* was reported the highest value and the lowest selenium content was reported from *Boerhavia diffusa*. The selenium content in corresponding soil samples were ranged from 96.4 to 133.9  $\mu\text{g kg}^{-1}$  in dry weight basis. The soil selenium content was always higher than plant selenium content; but plants that grown in selenium rich soils did not show higher selenium contents in their crops.