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Selenium content in vegetables consumed by Sri Lankans

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Selenium is an essential nutrient in trace amounts as it has beneficial health effects but in excess it is toxic. Selenoproteins and its association with glutathione peroxidase cause the beneficial health effects by preventing degenerative diseases such as cardiovascular ailments, hypothyroidism and weak immune systems. In recent years research has revealed that the range of selenium required is narrow (25 – 400 µg/day per person) and selenium has toxic effects in a broad range.

Selenium content in vegetables depends on the soil and will vary from country to country and region to region within the same country. Hence, selenium content in vegetables determined from other countries cannot be used as values for Sri Lanka. Further, most of the vegetable analyzed were not those commonly consumed by Sri Lankans. Selenium content in vegetables from Sri Lanka has not been reported. This study reports the selenium content in *Beta vulgaris* (beetroot), *Momordica charantia* (bitter gourd), *Solanum melongena* var. *esculentum* (brinjal), *Daucus carota* (carrot), *Cucurbita moschata* (pumpkin), *Abelmos chusesculentus* (ladies fingers), *Solanum lycopersicum* (tomato), *Nelumbo nucifera* roots (lotus roots), *Cucumis sativus* (cucumber) and *Solanum melongena* (Thai eggplant, commonly called Ela-Batu) obtained from Gampaha, Kottawa and Kelaniya. Selenium content was determined, using Hydride Generation Atomic Absorption Spectroscopy (HGAAS) on acid digested samples of vegetables.

Selenium content in vegetables (µg kg⁻¹, dry weight) analyzed were *B. vulgaris* (71.2 ± 7.2), *M. charantia* (46.2 ± 18.8), *S. melongena* (40.9 ± 11.1), *D. carota* (81.9 ± 5.1), *C. moschata* (88.4 ± 21.7), *A. chusesculentus* (22.1 ± 4.4), *S. lycopersicum* (20.7 ± 9.7), *N. nucifera* roots (66.0 ± 15.7), *C. sativus* (257.3 ± 44.8) and *S. melongena* (168.2 ± 48.8). The results showed significant difference on statistical analysis by one way Anova and Tucky's pairwise comparison. The results indicate that the selenium content in vegetables is very much less than the toxic value.

Keywords: Selenium, vegetables, Sri Lanka

Acknowledgements: Financial assistance by NSF