

3.8 Minerals in Leafy Vegetables Consumed by Sri Lankans

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ABSTRACT

Minerals are needed for our healthy living and have to be obtained from our diet. Green leafy vegetables are, in general, a good source of vitamins and minerals. Some of these essential minerals are found in trace amounts in our food. Tables used by nutritionists in Sri Lanka contain data obtained from other countries specially India. Except for one study carried out by Athukorala *et al* on the copper and zinc content in a few leafy vegetables, mineral contents in leafy vegetables from Sri Lanka have not been reported. In the present day there is growing concern on the selenium content in food due to its antioxidant properties and this is first report of the selenium content in the leafy vegetables in Sri Lanka.

The present study reports the calcium, potassium, sodium, zinc, iron, manganese, copper molybdenum, nickel, cobalt, chromium and selenium content in the conventional leafy vegetables namely *Ipomoea aquatica* (Sin. Kankun), *Alternanthera sessilis* (Sin. Mukunuvanna), *Centella asiatica* (Sin. Gotu Kola) and the non conventional leafy vegetables *Lasia spinosa* (Sin. Kohila), *Cardiospermum halicacubum* (Sin. Penela) and *Passiflora edulis* (Sin. Passion). Three varieties non conventional leafy vegetables were also analysed as there is a growing interest in consumption of these due to their medicinal properties.

The leafy vegetables for the analysis were obtained from the markets of Kiribathgoda. For each determination pooled out fresh leaves from six bundles were used. Each analysis reports the mean of five determinations. The minerals content in each variety of leaves were determined using Atomic Absorption Spectrometer. Except for the determination of selenium where wet ash method was used, the other minerals were determined on the ash obtained by heating the leaves in a muffle furnace at 550 °C to a constant weight. The results were subjected to statistical analysis by one-way ANOVA.

Contents (mg/100 g DW) of macro minerals (calcium, potassium, sodium, magnesium) and trace minerals (zinc, iron, manganese, copper, molybdenum, nickel, cobalt, chromium and selenium) varied from 1488 (*P. edulis*) – 284 (*C. asiatica*), 3410 (*A. sessilis*) – 237 (*C. asiatica*), 1427 (*I. aquatica*) – 280 (*C. asiatica*), 889 (*A. sessilis*) – 274 (*C. asiatica*), 75 (*L. spinosa*) – 12 (*C. asiatica*), 117 (*P. edulis*) – 22 (*A. sessilis*), 101 (*L. spinosa*) – 13 (*I. aquatica*), 12 (*L. spinosa*) – 1.3 (*P. edulis*), 2 (*I. aquatica*) – 0.5 (*C. asiatica*), 4 (*L. spinosa*) – 0.3 (*C. asiatica*), 2 (*A. sessilis*) – 0.2 (*C. asiatica*), 15 (*L. spinosa*) – 0.3 (*P. edulis*) and 76 (*A. sessilis*) – 1.2 (*C. helicacubum*) respectively. Except for iron and selenium *L. spinosa* had the highest amount of trace metals. In general macro minerals were high in *A. sessilis* while they were low in *C. asiatica*. Trace minerals were high in *L. spinosa*.

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