A-04: Identification of iodine-rich food

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Goitre is on the increase among men and women living in certain parts of Sri Lanka. According to the medical information this disease is mainly due to lack of iodine in food. To curb the spread of goitre, the identification of iodide rich food was undertaken, the ultimate aim being to make people aware of iodide levels in their daily diet. This paper gives a preliminary account of iodide levels found in prawns, tap and well water and some varieties of *Cocos nucifera*

Solid samples were subjected to alkaline digestion and the iodide concentrations were determined colorimetrically based on iodide catalysed reduction of cerium (IV) by As (III) in acidic medium. Fate of iodine during

cooking was examined by boiling 3g of prawn flesh in deionized water for 10 min.

Prawns were collected either from the Nugegoda market or from the Negombo beach. The iodide levels of the edible portions (flesh only) in 4 types of prawn species (n=10) were determined. These include *Penaeus monodon* (12.2 $\pm$ 1.4μg/100g), *Penaeus indicus* (17.5 $\pm$ 1.5 μg/100g) *Metapenaus enosis* (7.26 $\pm$ 0.97 μg/100g) and *Penaus semisulcatus* (12.76 $\pm$ 1.4 μg/100g). Determination of the iodide levels in the edible portion with exo-skeleton (shell) intact showed increased levels of iodide content.

Some representative iodide values determined for 2 species with exo-skeleton are as follows: *Penaeus indicus* (126.95 $\pm$ 4.87 μg/100g) and *Penaeus dobsoni* (48.19 $\pm$ 1.4 μg/100g). Fate of iodine during cooking was also examined. A loss of 40-60% of iodide content has been noted in this study.

Both tap water (n=10) and well water (n=10) were collected from Nugegoda and its suburbs. The iodide levels found in tap water and well water are (5.39 $\pm$ 1.7) x 10^{-9} and (5.04 $\pm$ 1.6) x 10^{-8} mol l^{-1} respectively. In contrast, iodide levels found in different varieties of *Cocos nucifera* are as follows: *Aurantica* (Rath Thembili) (2.2 $\pm$ 1.0) x 10^{-6} mol l^{-1}, *Typica* (Gon thembili) (2.73 $\pm$ 0.68) x 10^{-6} mol l^{-1} *Nana* (regia) (1.03 $\pm$ 0.8) x 10^{-6} mol l^{-1} and *nana* (pumilla, coconut) (2.49 $\pm$ 0.39) x 10^{-6} mol l^{-1}.

This study revealed the presence of high levels of iodide in the exo-skeleton compared to the flesh in the edible portions of prawns. Moreover, different varieties of *Cocos nucifera* are rich sources of iodide compared to tap and well water.