A-04 Distribution of iodine in sea crabs and fate of iodine in prawns during cooking

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Iodine is one of the most important micronutrients the human body needs. In our continuing effort to determine iodine in raw foods and its fate during cooking, we report the distribution of iodine in sea crabs and fate of iodine during cooking.

Solid samples were subjected to alkaline digestion and iodide concentrations were determined colorimetrically, based on iodide catalyzed reduction of Ce(IV) by As(III) in acidic medium.

The distribution of iodide levels (in μg/100g) in sea crabs (*Neptunus pelagicus*) are as follows: raw leg muscles (65.71±2.5), raw thoracic muscles (62.69±1.7), raw gills (1526±142) and shells(183.64±29.10). A loss of 20-30% of iodide has been observed during cooking [boiled muscles (45.58±1.5), boiled thoracic muscles (47.02±1.7), boiled gills (1228±107)].

Recently, we reported that exo-skeleton of a prawn is rich in iodine. Boiling prawns with exo-skeleton intact and thereafter analyzing the edible portions indicated increased levels of iodide content. Some representative iodide levels (μg/100g) raw prawns with shell, raw prawns without shell, cooked prawns without shell, cooked prawns without shell after boiling with shell intact are as follows:

Peneaus monodon (102.10±6.0.21), (12.2±1.4), (5.25±.0.21), (36.64±1.4)
Peneaus indicus (126.12±1.43),(17.57±0.54),(6.33±0.36), (44.12±3.1)
Peneaus semisulcatus (59.38±1.3), (12.76±1.4),(9.94±0.57), (25.09±2.68)

This investigation revealed that in all foods analyzed, in our laboratory which includes sea water/fresh water fish, pulses/cereals, fruits, prawn flesh (except green gram) iodide levels fell in the range 0-65 μg/100g), sea crabs are the richest source of iodine hitherto known. Crab flesh is richer in iodine than prawn flesh (8-20 μg/100g). Loss of iodine on boiling is considerably less for crabs than for prawns (40-60%). Boiling prawns with exo-skeleton intact leads to an increase in the iodide levels in the edible portions.