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Study of variation of iodine content from iodated edible common salt in different cooking media

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Iodine is an essential micronutrient for humans. Insufficient intake of iodine leads to iodine deficiency disorders (IDD). In Sri Lanka KIO_3 is the main salt iodizing agent. According to the WHO 20% iodine loss from salt can occur during cooking. The present study evaluates the effect of different cooking media on iodine content of iodated edible common salt before and after cooking. The used cooking media are *Piper nigrum* (black pepper), *Averrhoa bilimbi* (bilimbi, billing), *Citrus limon* (lemon), *Garcinia gummi-gutta* (gambooge, goraka), *Citrus aurantifolia* (lime), *Allium sativum* (garlic), *Capsicum annum* (fresh green chillies), *Tamarindus indica* (tamarind) and vinegar. Distilled water was used as the blank medium. The residual iodine contents present in the salt samples were analysed using both titrimetric and spectrophotometric methods.

The salt samples with black pepper caused colour interferences and only the spectrophotometric method was used to detect the residual iodine content. The lowest iodine loss was detected in distilled water and it became higher with the addition of cooking media both before and after cooking for 5 minutes. There was also higher iodine loss after cooking. The slight acidic media such as in pepper, garlic and fresh chillies caused high iodine loss after cooking. The lime showed the highest iodine loss before cooking and it increased with acidity (below 4.2). Statistical comparison of the two methods using paired t-test showed that there is no significant difference between the two methods at 95% confidence level. It can be concluded that both methods produce comparable results for iodine loss before and after cooking. Therefore it is recommended to add iodated edible common salt after cooking to avoid losses. This study quantifies the loss of iodine during cooking in Sri Lankan cooking media and the percentage loss is verified by both titrimetric and spectroscopic methods.