

**Effects of Storage and Cooking Practices on the Stability of Iodine in Iodised Salt
in Kenya**

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Abstract

Iodine deficiency is controlled through salt iodisation and the Kenyan law mandates an iodine concentration of 100 parts per million (ppm) in all salt for human consumption. The success of this fortification program, however, depends, to a large extent, on the retention of the micronutrient added to the salt. Thus the study evaluated the stability of the added fortificant under different storage conditions and cooking practices. Salt samples with predetermined iodine content were stored under simulated environmental conditions using domestic storage practices for 90 days during which samples were drawn after every fortnight for iodine determination, using the iodometric titration method. Iodized salt was used in varying cooking practices and iodine retention in the cooked foods investigated using the spectrophotometric method, based on the Sandel-Kolthoff reaction. The loss of iodine was greater when iodised salt was stored in open polythene packets than in sealed ones or in plastic or glass containers with lids. The loss was also greater in iodised salt stored at a temperature of 37°C and 95% RH than in that stored at 20°C and 60% RH. The 35.5% loss of iodine in cut open packets at 37°C and 95% RH for 90 days, was highly significant ($p < 0.05$) with the decrease being observable from 45 days onwards. In general, the retention of iodine during cooking varied from 43.7% to 67.6% and was lower but not significant ($p > 0.05$) in stewed than in boiled samples.