

**EFFECT OF GAMMA IRRADIATION ON MINERAL,  
VITAMINS AND COOKING PROPERTIES OF SORREL  
(HIBISCUS SABDARIFFALL) SEEDS**

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Irradiation is potentially useful technology ensuring the safety and extending the shelf life of food production worldwide. However, nutritional changes may occur which necessitate critical examination of the effect on food constituents. The effect of  $\gamma$ - irradiation on the mineral content, vitamins and cooking properties of sorrel seeds (*Hibiscus sabdariffa*) was examined at doses of 0, 2.5, 5, 7.5, 10 and 20 kGy by means Atomic Absorption Spectrometer. AAS for minerals, HPLC for vitamins namely, Thiamine, Folic acids, and Niacin, while spectrophotometer was used to determine vitamin A. AAS results of the mineral content showed significant reduction in Na, K, Pb, Cu and Ni, while Mg, Mn, Fe and Zn were enhanced by  $\gamma$ -irradiation. Gamma-irradiation had a dose dependent significant reduction on thiamine ( $P < 0.05$ ), Niacin was relatively stable to the doses applied while folic acid control (2.38 mg/100g) was only reduced significantly at 2.5 kGy and thereafter became stable at higher doses. Gamma irradiation led to an increase in vitamin A content ( $P < 0.05$ ). Irradiation at doses above 2.5 kGy reduced significantly the cooking time of the sorrel seeds. It was concluded that  $\gamma$ -irradiation at a limit dose of 10kGy would be technologically appropriate for preservation and enhancement of nutritional properties.

Keywords: Irradiation, minerals, vitamins, sorrel seeds

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