

## Nutritional analysis of some major micronutrients in common Swazi foods

Dr G. C. Bwembya<sup>1</sup>, Dr J. M. Thwala, Dr S. M. Silaula, Prof. D. A. Otieno<sup>1</sup>

### ABSTRACT

This study presents a baseline data on the content of vitamin A, iron and calcium in common Swazi foods. Nutritional values for Zinc are also reported on a few selected vegetable foods. The samples were collected from various areas throughout Swaziland depending on the availability. Vitamin A values were determined using reversed phase High Performance Liquid Chromatography (HPLC) after saponification with potassium hydroxide, extraction with petroleum ether and dissolution in propan-2-ol. A 5 C18 bonded silica column was used for the analysis. All the vitamin A isomers were eluted as one peak using 97% methanol as the mobile phase. Iron, calcium and Zinc values were determined using flame Atomic Absorption Spectrometry (AAS). The samples were digested in a 1:1 mixture of hydrochloric acid and nitric acid. Findings indicate that some of the cheap and easily available food sources provide vitamin A, iron, calcium and zinc. The mean values for corchorus olitorus (okra leaves, ligusha), cucurbita pepo (pumpkins leaves), momordica involucre (bitter gourd, inkhakha), amaranthus spinosus (imbuya), bidens pilosa (chuchuzza), Ipomea batatas (sweet potato leaves), spinacia oleracea (spinach), cucurbita moschata (yellow pumpkin mash) and persea Americana (avocado) were 959, 215, 1194, 216, 1114, 880, 490, 313 and 102 micrograms vitamin A per 100g (All-trans retinal). These values translate to % Recommended Daily Intake (RDI) values of 96%, 22%, 119%, 22%, 11%, 88%, 49%, 31% and 10% respectively. Most samples analyzed were good sources of iron, with amaranthus caudatus having the highest concentration (76mg/ 100g) while beers and local brews were classified as poor sources with Hansa and Grape fruit local brew having the lowest content of iron (0.1mg/100g). The highest concentration of calcium (2683 mg/100 g) was found in amaranthus spinosus while beers and local brews generally gave low calcium content (0.4 – 0.6 mg/ 100 g). The highest zinc content (13mg/100 g) was obtained from grasshoppers and the lowest (2.6 mg./100 g) from pumpkins seeds.

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<sup>1</sup> Department of Chemistry, University of Swaziland