

Abstract

Food shortage is a common occurrence in the developing countries. The shortage is emancipated in both low quantity and poor quality resulting in deficiency based diseases. The fact that pumpkins have an easy production (3-4 month), long shelf life (over six month) and therefore available, should increase their likelihood incorporation in the diet. The study set out to establish the varieties and levels of micronutrients in the fruits of the pumpkins grown by small holder farmers in four districts of Busia, Gucha, Jinja and Tarime within the Lake Victoria Basin. A questionnaire was administered to determine information on the varieties. The levels of β carotene, α -tocopherol and the B-complex vitamins were determined with RP HPLC. Vitamin C was analysed by titration while AAS was used for the analysis of trace elements (zinc, iron and selenium). Standards were run and calibration curve equations with $0.955 \leq R^2 \leq 0.999$ used to calculate the concentrations. Three species of pumpkins *Cucurbita maxima*, *Cucurbitapepo* and *Cucurbitamoschata* were widely distributed. Ten different varieties were sampled. The levels of micronutrients in different varieties (Fruits) showed significant differences that could not be accounted for by chance. At 95 % confidence limit, moisture ($p = 0.001$), β -carotene ($p = 0.002$), thiamine ($p = 0.000$), riboflavin ($p = 0.001$), niacin ($p = 0.009$) and pyridoxine ($p = 0.000$) varied significantly. Further comparison of the samples from each district equally showed significant differences ($p < 0.05$) in all micronutrients except vitamin C ($p = 0.08$) and selenium ($p = 0.447$) levels. These results indicate non universality in levels of micronutrients in different varieties and between locations enhancing the need for focusing on those superior varieties (like the banana variety) as established in this study. From the levels of the micronutrients (β -carotene 2.220-2.670 mg / 100 g, zinc 0.986-1.728 mg / 100g, iron 2.16-1.68 mg / 100g) established, it is appropriate to popularize the utilization of pumpkins as a conventional rich food source to supplement the traditional cereal based diets aimed at combating the problem of food shortages and malnutrition in the Lake Victoria Basin and developing countries in general.