Title: **Levels of selected nutrients in varities of ipomoea batatas grown in Vihiga County, Kenya**

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Abstract: Deficiencies of micronutrients are a major global health problem with more than 2 billion people (among them children) in the world today estimated to be deficient in key vitamins and minerals. Most of these people live in low income countries while micronutrient-rich foods such as sweet potatoes are locally available. Micronutrient deficiencies increase the general risk of infectious illness and of dying from diarrhea, measles, malaria and pneumonia, conditions that are among the 10 leading causes of death in the world. There are a number of varieties of sweet potatoes whose potential to address nutrient related deficiencies has not been explored. Districts in vihiga County grow the white, yellow, purple and orange fleshed sweet potatoe varieties. The extent of consumption of sweet potatoes and selected nutrients in the four varieties of sweet potatoes as well as the nutrients in soils, in Vihiga County were studied. A questionnaire was administered to a total of 158 farmers to ascertain the consumption of varieties of sweet potatoes in Sabatia, Hamisi, Emuhaya and Vihiga districts of Vihiga County prior to random sampling of four varieties of sweet potatoes and the soils on which they grow. The methods used for analysis were; HPLC for beta-carotene (to convert to vitamin A), Iodometric titration for vitamin C, AAS for copper (Cu), calcium (Ca) and iron (Fe) and flame photometry for potassium (K). Both raw and boiled samples were analyzed for vitamin A and C. Respondents indicated that sweet potatoes are farmed by over 87% of farmers and about 95% of who grow them on small scale consumes 12% of the produce. 43% of the respondents indicated they grow mainly two varieties of sweet potatoes (yellow and white fleshed) while 46 % showed that the yellow variety was the most preferred for consumption. Except for calcium (27.35mg/100g) being the highest in the yellow variety, the orange variety had significantly higher levels of other mineral nutrients :(0.44mg/100g Cu; 1.23mg/100g Fe; 168.39mg/100g K ($p<0.05$). The orange variety had beta-carotene content ranging 4619-48891lg/100g being significantly higher than the other varieties ($p<0.05$). Vitamin C (6.61mg/100g) was significantly higher in raw samples of the orange variety ($p<0.05$) than in boiled samples. In soils, the nutrients ranged as follows; Cu 0.85-1.53 mg/100g; K 73.90-100.50mg/100g; Fe 225.78- 296.00mg1l00g and Ca 30.68-39.58mg/lOOg. While consumption of sweet potatoes is described as poor in Vihiga county, conversion of beta carotene to vitamin A based on 100g of the orange fleshed sweet potato grown in this region shows it has a potential contribution of over 100% to the recommended dietary allowance of vitamin A (300x1O-2mg/day) for children aged between 1-8 years. As well the orange fleshed variety has a contribution of 31%, 16%, 5% and 3% to the recommended daily requirements for Cu (2mg/day), Fe (15mg/day), K (3500mg/day) and Ca (800mg/day) respectively. It is recommended that programs be developed to boost consumption of sweet potatoes in this region and to other localities. These findings indicate production and consumption of the orange fleshed sweet potatoes should be encouraged.