

**GENETIC CHARACTERIZATION OF SELECTED SWEETPOTATO
VARIETIES FOR DUAL FOOD AND FEED UTILIZATION**

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ABSTRACT

The sweetpotato *Ipomoea batatas* L. (Lam.) is a symbol in the fight for a global nutrition plan that can save millions of children and help build a healthier and more productive future. In world crop statistics, sweetpotato is currently the sixth most important food crop after rice, wheat, potatoes, maize, and cassava. In the developing countries it is ranked fifth after maize, rice, wheat and cassava, whereby it is a smallholder crop tolerant of a wide range of edaphic and climatic conditions and grown with limited inputs. Consequently, it has been relied on as a source of calories since its vines and/or storage roots can be used for direct human consumption, as well as providing inexpensive, protein-rich fodder for animals. It is thus a cheap, nutritious solution for developing countries needing to grow more food on less area for rapidly growing populations. However identification of those sweetpotato varieties which have optimal morphological features suitable for both food and feed has not been done. This study therefore seeks to genetically characterize selected 14 Ugandan farmer's sweetpotato families to identify those with superior morphological characteristics suitable for dual purposes. In the early screening stages plants will be raised from true seeds after scarification. Germination of the seedlings will be done in special trays. A selection of single true seed plants will be done, after which vines will be generated. Those selected among true seed plants are will then enter observation yield trials (OTs). OTs will be carried out in order to discard those which clearly do not meet the lowest acceptable gross morphological descriptors. In addition to the morphological identification, nutritional analysis of the various nutrients and molecular characterization of the selected varieties will also be done. Analysis of variance will be used as a statistical method to find out if significant differences exist between the varieties. It is expected that the current study will: (i) Allow selection and publishing of sweetpotato varieties with optimal characteristics for both food and feed (dual purpose). (ii) Contribute to the advancement of ongoing research on sweetpotatoes. (iii) Contribute towards sustainable food production, one key area of concern in the realization of vision 2030 in Kenya and other developing countries.