

## **Nutritional potential of the under-utilized indigenous root tuber *Nymphaea petersiana* in Malawi**

Chawanje C.M., Barbeau W.E. and Grun I.

University of Malawi – Polytechnic, Private Bag 303 Chichiri, Blantyre 3, Malawi

**Abstract.** Demographic, health and micronutrient surveys in Malawi show that the nutritional status of the population is very poor, and has not improved during the last decade. Micronutrient malnutrition is particularly severe. For example, sub-clinical vitamin A deficiency was found in 60% of preschool children, 38% of school children, 57% of women of childbearing age and 38% of men. Eighty percent (80%) of pre-school children, 27% of non-pregnant women, and 17% of men were anaemic. The national strategy to deal with this problem is multisectoral intervention involving many collaborating partners. One strategy being promoted is the utilization of readily available indigenous crops. One such indigenous crop is a wild water lily root tuber called “nyika” (*Nymphaea petersiana*), which grows abundantly in the wild in the extensive swamps of the lower Shire river in Chikwawa and Nsanje districts. Nyika tubers are commonly used as sources of food in times

of famine and/or poor harvests. Whole cooked tubers are sold in markets as a snack food, or the tubers are peeled, cut into small pieces, dried and ground into flour. The flour is cooked into nsima, the national dish, which is eaten with different types of stews and vegetables. Nutritional analysis of the Nyika tuber revealed it to be a good source of quality protein (about 8%), limiting only in lysine. Although the fat content is low (1% crude fat), the predominant fatty acids in the tuber were essential fatty acids like oleic (47%), linoleic (37%) and linolenic (7%). More importantly was the high content of iron (100 mg/g of uncooked sun dried tuber). 100 mg of uncooked sun dried tuber supplies approximately 88% of the recommended daily allowance (RDA) of iron in children and 59% of the RDA in women. This amount of iron is higher than the reported values for other common root tubers such as cassava (78 mg/g), potato (7 mg/g) and sweetpotatoes (20 mg/g).