

Nutritional Properties of Peanut Based Beverages: A Promising Solution for Undernutrition in Malawi and Possibly Beyond

A.P. GAMA, K. ADHIKARI*, Department of Food Science and Technology, The University of Georgia, 1109 Experiment St, Griffin, GA 30223; A.M. MWANGWELA, Department of Food Science and Technology, Lilongwe University of Agriculture and Natural Resources, P.O Box 219, Lilongwe, Malawi; W. GICHOHI, International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), P.O. Box 1096, Lilongwe, Malawi.

Undernutrition remains a challenge in most developing countries like Malawi. To address this challenge, the search for effective nutrition interventions and nutritious foods especially from sustainable and resilient food sources, like peanuts, is ongoing. In this study, nutrient profiles of two highly acceptable peanut-based beverage prototypes were determined using official standard analytical methods. Apart from water, peanut paste, sugar, salt, stabilizer, and flavorings, one of the beverages had barley malted milk powder (S3-2) while the other one had sorghum malted milk powder (S3-5) in its formulation. Nutritional value of the peanut-based beverages was assessed through comparison with the Food and Drug Administration (FDA) Daily Reference Values (DRVs) or Reference Daily Intakes (RDIs), herein referred to as Daily Values (DVs). Furthermore, the nutrient composition of the peanut-based beverages was compared with that of F100. The F100 is energy and protein-dense milk-based product fortified with vitamins and minerals and is recognized by the World Health Organization (WHO) as a reference diet for managing severe malnutrition.

The S3-5 had a better nutrient profile than S3-2 and F100 (WHO-recognized reference diet), respectively, in terms of protein, potassium, calcium, phosphorus, and magnesium. A 237-mL (8 oz.) serving of the S3-5 was an excellent source ($\% DV \geq 20$) of protein, total dietary fiber, phosphorus, calcium, molybdenum, and manganese and also, a good source ($10 \leq \% DV < 20$) of potassium, magnesium, and fat. As expected of peanut oil, the fat was mainly composed of unsaturated fatty acids (oleic acid and linoleic acid). Based on the essential amino acid reference pattern from the Food and Agriculture Organization, S3-5 was a source of high-quality (complete) protein. Therefore, the S3-5 may help in the management of undernutrition in Malawi given its nutritional quality. Beside Malawi, the peanut-based beverage may also be valuable in other countries where undernutrition is also a challenge.