Abstract

Objective: This study was designed to evaluate the nutritional quality and key essential nutrients in indigenous foods consumed by vulnerable groups to identify practical applications for alleviation of hunger and malnutrition in Kenya. Plant foods such as cereals, legumes and vegetables possess high nutritive value and functional properties which are associated with positive health and nutrition.

Methodology and results: The indigenous foods were identified and selected on the basis of common food ingredients used by vulnerable groups in Kenya. They were evaluated for their nutritional composition, amino acid and fatty acid profiles using standard methods. The foods contained 6-44% protein; 11-43% fat; 324-497 kcal energy; 15-57% carbohydrates; 25-328 mg/100g calcium; 1.0-51 mg/100g iron; 44-1320 mg/100g magnesium among others. The indigenous vegetables exhibited 3.2-63 mg/100g vitamin C and 0.7-5.1 mg/100g @-carotene contents while the grains showed 22-110 Ag/100g folic acid, 1.2-17.7 mg/100g niacin and high B Vitamins content. The total essential amino acid content ranged from 0.9 to 12.8% while fatty acid levels were 4.8-33.6% palmitic, 1.5-9.0% stearic, 2.2-53.9% oleic, 4.5-53.7% linoleic and 0.9-60.4% B-linolenic acids.

Conclusion and application of findings: The study demonstrated that the food ingredients were high in macro- and micro-nutrients, essential amino acids and fatty acids, and could potentially be used in addressing nutrition and food security issues, particularly among vulnerable groups in Kenya. The study findings provide practical feasibility of on use of locally-produced formulations as low-cost alternatives in supplementary and emergency feeding programmes to reduce malnutrition and chronic diseases. These foods are low-cost and locally available and therefore offer food-based solutions to hunger and malnutrition in developing countries.