Proceedings of the 13th ISTRC Symposium, 2007
pp. 514 – 520

Nutritional evaluation of composite flour based on root and tuber crops and sensory acceptability of the developed products

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Abstract. A study was conducted to evaluate the nutritive value of composite flour based on root and tuber crops and sensory acceptability of the developed products. Fresh tubers and roots of cocoyam, sweetpotato and cassava, respectively, were washed separately, peeled and sliced. The sliced pieces of each crop were soaked separately in water for 1-2 h to reduce toxic and anti-nutritional factors and sun dried for 4-5 days. The dried slices were milled and sieved. The flour was used in the formulation of six types of composite flour for the preparation of baked products and weaning foods. The formulated mixtures included: cocoyam: wheat: soybeans (50:20:30), cassava: wheat: soybeans (50:20:30), sweetpotato: wheat: soybean (50:25:25), cocoyam: maize:soybean (50:20:30), cassava: maize: soybean (50:25:25), sweetpotato: maize: soybean (50:25:25). The nutritive content of formulated flour mixtures contained 9.96 to 15.60, 67.98 to 74.11, 2.57 to 3.19 and 1.66 to 2.89 percent of protein, carbohydrate, fat and crude fibre, respectively. Mineral content of formulated mixtures ranged from 13.0-480.0 mg/100g for iron, calcium, phosphorus, and magnesium while the energy value ranged from 360.07 to 363.13 kcal. Sensory acceptability of the products developed from the formulated flours was carried out to asses taste, texture, smell, colour and general acceptability using a five point hedonic scale. Breads and porridges prepared were generally accepted in terms of taste, texture, smell and colour. It was therefore concluded that flour from root and tuber crops can be blended with cereal and legume flours to produce weaning foods and baked products.