

Nutritional Composition of Maize-Based Snack Fortified with Kidney Beans and Alligator Pepper

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Abstract : This work examined the nutritional composition of maize-based snack (kango) fortified with kidney beans (*Phaseolus vulgaris*) and alligator pepper (*Aframomum melegueta*). The snack is essentially traditional food being consumed by all ages in the southwestern part of Nigeria. Three varieties of maize were obtained from the Institute of Agricultural Research and Training (IAR&T), Ibadan, Nigeria, namely: ART-98-SW06-W, Br 9943-DMR-SR-W and SUWAN-1-SR-Y. Flour blends were obtained using the Response Surface Methodology (RSM) which resulted in appropriate blending ratios of maize, kidney beans and alligator pepper. Kango was prepared by milling maize grain into flour; ingredients such as pepper, onion, salt and water were added to the maize flour, mixed together to make a slurry. The slurry was fried in hot groundnut oil at a temperature of 126°C for 8 minutes. The incorporation of kidney bean and alligator pepper in maize flour was observed to increase the water and oil absorption capacities of the resultant blends thereby giving 109.21 to 156.90 ml/mg and 110.68 to 136.67 ml/mg respectively for kango. The pasting properties of the maize flour blends were also enhanced due to the incorporation of kidney bean and alligator pepper. The peak viscosity of the flour blends ranged from 3.24 to 7.67 RVU. The incorporation of kidney bean and alligator pepper in the production of the snacks increased the protein contents from 9.63 to 16.37%. The mineral contents (sodium, potassium, calcium, magnesium, iron and zinc) of the snacks were equally increased due to the incorporation of kidney bean and alligator pepper. A general increase was observed for vitamin B1 (0.69- 1.25 mg/100g), B2 (0.09 - 0.46 mg/100g) and B3 (0.11 - 0.72 mg/100g) in the snacks due to the incorporation of kidney bean and alligator pepper. This research work showed that kango produced from the composited maize flour, kidney bean and alligator pepper had better functional properties and higher nutritional contents.

Keywords : functional properties, kango, nutritional composition, snack

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