

Processing, Nutritional Assessment and Sensory Evaluation of Bakery Products Prepared from Orange Fleshed Sweet Potatoes (OFSP) and Wheat Composite Flours

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Abstract : Orange fleshed sweet potatoes (OFSP) are highly grown and are available plenty in rural and urban local markets and its contribution in reduction of food insecurity in Rwanda is considerable. But the postharvest loss of this commodity is a critical challenge due to its high perishability. Several research activities have been conducted on how fresh food commodities can be transformed into extended shelf life food products for prevention of post-harvest losses. However, such activity was not yet well studied in Rwanda. The aim of the present study was the processing of backed products from (OFSP)combined with wheat composite flour and assess the nutritional content and consumer acceptability of new developed products. The perishability of OFSP and their related lack during off season can be eradicated by producing cake, doughnut and bread with OFSP puree or flour. The processing for doughnut and bread were made by making OFSP puree and other ingredients then a dough was made followed by frying and baking while for cake OFSP was dried through solar dryer to have a flour together with wheat flour and other ingredients to make dough cake and baking. For each product, one control and three experimental samples, (three products in three different ratios (30,40 and50%) of OFSP and the remaining percentage of wheat flour) were prepared. All samples including the control were analyzed for the consumer acceptability (sensory attributes). Most preferred samples (One sample for each product with its control sample and for each OFSP variety) were analyzed for nutritional composition along with control sample. The Cake from Terimbere variety and Bread from Gihingumukungu supplemented with 50% OFSP flour or Puree respectively were most acceptable except Doughnut from Vita variety which was highly accepted at 50% of OFSP supplementation. The moisture, ash, protein, fat, fiber, Total carbohydrate, Vitamin C, reducing sugar and minerals (Sodium, Potassium and Phosphorus.) content was different among products. Cake was rich in fibers (14.71%), protein (6.590%), and vitamin c(19.988mg/100g) compared to other samples while bread found to be rich in reducing sugar with 12.71mg/100g compared to cake and doughnut. Also doughnut was found to be rich in fat content with 6.89% compared to other samples. For sensory analysis, doughnut was highly accepted in ratio of 60:40 compared to other products while cake was least accepted at ratio of 50:50. The Proximate composition and minerals content of all the OFSP products were significantly higher as compared to the control samples.

Keywords : post-harvest loss, OFSP products, wheat flour, sensory evaluation, proximate composition

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