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Development and Quality Evaluation of Nutritionally Enriched Bread with Pumpkin Cucurbita moschata (Lam.) Poir Flour

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Postharvest losses is a major challenge hampering vegetable production in most developing countries including Sri Lanka. Pumpkin *(Cucurbita moschata)* being a perishable crop owing to its high moisture content has a short shelf-life under tropical conditions. Drying is the most common method used to preserve pumpkin. An electric food-dehydrator can consistently produce a quality product and is easier compared sun drying, over drying and vacuum dehydration. Pumpkin bread was successfully produced with the ingredients of wheat flour, pumpkin flour, fat, sugar, salt, bread improvers, yeast and water. The nutritional and sensory properties of breads supplemented with 5, 10, 15 and 20% (w/w) pumpkin flour and control made with 100% wheat flour were evaluated. The bread incorporated with 10% pumpkin flour was most preferred based on the sensory scores for colour (5.97±0.22), aroma (5.70±0.16), taste (6.17±0.16), mouth feel (5.97±0.13) and overall acceptability (5.87±0.26) on a seven-point hedonic scale. The results of the physico-chemical analysis revealed that the developed bread with 10% pumpkin flour contained the acceptable level of moisture (35.5%), total soluble solid (1.33°Brix), ascorbic acid (3.12mg%), total phenolic content-DPPH method (97.97mg GAE/g) and antioxidant activity-Folin-ciocalteau method (19.57µg/ml). Based on the total plate, mold count and EC-Broth test, the developed bread were not affected by any of the microbial spoilage due to inactivation of microbes during drying and baking at high temperature of 200°C. The mixture of 10% pumpkin flour with 90% wheat flour was found to be successful for the production of nutritionally enriched bread with improved physico-chemical and organoleptic qualities within the universally accepted standards.

Keywords: *Bread, nutritional enrichment, physico-chemical quality, pumpkin, sensory properties*

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