

**DEVELOPMENT AND QUALITY EVALUATION OF WHEAT -  
SWEET POTATO FLOUR COMPOSITE COOKIES**

**BY**

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## ABSTRACT

A research study was carried out to reduce the wastage and improve the utilization of sweet potato through the development of value added products such as sweet potato flour and sweet potato incorporated cookies. The good qualities of red skinned variety of sweet potatoes (Wariapola Red) were procured locally from the field of commercial grower. Sweet potatoes were washed, peeled and cut into thin slices, dried in the sun until the pieces were quite brittle, milled, sieved, packed in air tight container and stored under refrigeration condition until further use.

The sweet potato flour was nutritionally analyzed that contains protein content 2.3%, rich in dietary fibre 9.4% and although soluble carbohydrate content 85.48%, so a successful combination with wheat flour for cookie production would be nutritionally advantageous. The cookies were developed using wheat and sweet potato flour. The various ratio of wheat to sweet potato flour used; 100:00, 80:20, 60:40, 40:60, 20:80, 00:100.

The nutritional composition of the various flour blends used for the preparation of cookies were determined. The physico - chemical analysis and sensory evaluation were carried out to know the acceptability and shelf life of sweet potato cookies. Physical parameters of sweet potato cookies such as diameter, thickness, volume and spreading factor decreased from 7.40cm to 6.52cm, 0.969cm to 0.910cm, 41.66cm<sup>3</sup> to 30.41cm<sup>3</sup> and 6.43 to 5.61 respectively, while density of cookies increased from 0.474gcm<sup>-3</sup> to 0.652gcm<sup>-3</sup> with marginal increasing of sweet potato flour. The sweet potato cookies were analyzed for nutritional composition, which includes moisture, fibre, fat, ash, protein and soluble carbohydrate content. The moisture, ash, fibre and soluble carbohydrate content increased from 1.33 to 1.37%, 2.07 to 2.4%, 2.14 to 8.7% and 80.86 to 85.97% respectively, while fat and protein content decreased from

8.7 to 4.04% and 7.04 to 6.22 respectively, with increase in the sweet potato blend 0 – 100% for the freshly made wheat – sweet potato cookies. These were evaluated for sensory analysis that included texture, colour, mouth feel, taste and overall acceptability. The results of sensory evaluation revealed that there was a significant difference among the treatments at 5% significant level.

Based on the quality and functional characters, the most preferred wheat – sweet potato cookies were selected and subjected to storage studies. The 40% sweet potato flour contained cookie was analyzed for nutritional composition during the storage period. The ash, fibre, fat and protein content decreased from 2.17 to 1.75%, 4.24 to 4.15%, 5.57 to 5.42% and 6.80 to 6.76% respectively with storage period, while moisture content increased from 1.35 to 2.01% with storage period. The finding of the study revealed that, the declining trend was observed in ash, fibre, protein and fat content with storage period, while an increasing trend was observed in moisture content with storage period for all the treatments.

Based on the quality characteristic of wheat and sweet potato flour composite cookies, the 40% sweet potato flour contained cookie has the good score in organoleptical point of view and acceptable nutritional quality compared to other combinations. There is no remarkable changes in organoleptic characters were observed up to three months of storage in ambient condition of average temperature 30<sup>0</sup>C and relative humidity of 75 – 80%, indicating that the 40% sweet potato flour added cookies could be stored up to three months.

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