

**DEVELOPMENT AND QUALITY CHARACTERISTICS
OF PROTEIN EN-RICHED WHEAT-SOYBEAN BISCUITS**

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BY

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ABSTRACT

Many countries have made great strides to improve their food and nutrition situation, but hunger and malnutrition remain serious problem in many parts of the world specially in third world country. This research study was conducted to reduce the Protein-Energy Malnutrition (PEM) of the Sri Lankan's children through the development of protein en-riched wheat-soybean biscuits.

The biscuits were produced from wheat and soybean flour. The various ratios of wheat to soybean flour used were 100:00, 95:05, 90:10, 85:15, 80:20 and 75:25. The biscuits were subjected to nutritional and organoleptic analysis to evaluate the suitability of these biscuits for consumption and for long shelf life. The nutritional (protein, fats, ash, moisture, carbohydrate,) and organoleptic (colour, taste, flavour, texture, overall acceptability) qualities were analyzed for freshly made wheat-soybean biscuits. The protein, fat and energy (calorie) value of the biscuits increased from 5.0 to 14.19%, 14.80 to 24.01% and 422.34 to 476.42 kcal/g respectively, while the moisture, ash and carbohydrate content decreased from 2.9 to 1.56, 9.79 to 9.35 and 67.51 to 50.89% respectively, with increase in the soybean blend (0 - 25%) for the freshly made wheat-soybean biscuits. Nine-point hedonic scale ranking method was used to evaluate the organoleptic characters. Generally the mean scores for all the assessed sensory characters decreased with increase in the soybean blend. Organoleptic assessment was conducted for wheat-soybean biscuit's taste, colour, texture, flavour and overall acceptance for all treatments.

Based on the quality characters, the most preferred protein en-riched wheat-soybean biscuits were selected and subjected to storage studies. Storage study was carried out in two weeks interval throughout the experimental period. The findings of the

storage study revealed that, the declining trend was observed in protein, fat, ash and total sugars with storage period and an increasing trend was observed in moisture with storage period for all the treatments. From the overall acceptance rating, the 10% soybean flour was added biscuit has the highest mean value compared to other combinations. There is no remarkable changes in organoleptic characters were observed upto 6 weeks of storage in ambient condition of average temperature 30°C and of the RH of 75-80% indicating that the 10% soy flour added biscuits were shelf life stable upto 6 weeks.

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