University of Sri Jayewardenepura

DEVELOPMENT OF SUPPLEMENTARY FOOD FORMULA USING LOCALLY AVAILABLE NUTRITIONALLY SOUND RAW MATERIALS

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ABSTRACT

As the malnutrition and associated deficiencies are prevailing evidently, it should be urgently combated. As an immediate action proper nutrient supplementation can mitigate the consequence of malnutrition. The present study was carried to develop a supplementary food formula from locally available nutritious raw materials to fulfill the energy requirement of adults, adolescents and school children. This supplementary food formula can be used to overcome malnutrition, since it provides a nutritious food supplement consisting of locally available raw materials foods.

The main objective of this study was to produce a supplementary food formula as a product of nutrient dense, of suitable consistency and affordable for target market. To fulfill the objective of the research, a preliminary study was carried out to identify the consumer preference of the proposed supplementary food products in the group of target market. According to the survey, the selection of raw materials and their optimal ratios were determined. The supplementary food developed basing on the recommended daily allowance requirements and the sensory analysis contains rice flour 50%, green gram flour 15%, cowpea flour 15%, winged bean flour 10%, sesame 5% and pumpkin 5%. It was further analysed for its physical properties, chemical properties, sensory characteristics and *in vitro* protein digestibility using standard procedures.

Nutritionally the 100 g of developed supplementary food could able to meet at least 1/5 of RDA for energy, protein, fat and minerals of both children and adults. Proximate composition revealed the protein and lipid contents being 14.8 g/100 g and 8.02 g/100 g, respectively. Mineral analyses performed on samples indicated the conformity to concentrations as per the SLSI standards of the pre cooked cereals. The results of *in vitro* protein digestion indicated that the protein digestibility is more than 70%. Finally the product was considered to be a well balanced low cost food which can be introduced as a new supplementary food product to accomplish the requirement of the society.

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