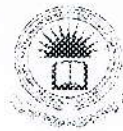


**PRODUCTION AND EVALUATION OF
PHYSICO-CHEMICAL PARAMETERS OF PEANUT
MILK YOGHURT FORTIFIED WITH SKIMMED MILK
POWDER**



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ABSTRACT

Peanut is used as an oil crop, as a snack and in confectionaries in Sri Lanka. There is more value addition and novel products from peanut but most of them are not commercially available in Sri Lankan market. Peanut milk and its products have nutritional benefits for young and old people because of richness in protein, minerals and essential fatty acids such as linoleic and oleic acids. The production of non-dairy based yoghurts has been pointed out as a novel trend in the creation of functional foods. A growing number of consumers opt to plant based milk substitutes for medical reasons or as a lifestyle choice. Therefore, this research study was conducted with an aim to produce peanut milk based yoghurt by utilizing the functional properties of peanut milk to evaluate physico-chemical and organoleptic characteristics of peanut milk based yoghurt. Yoghurt samples were produced from blends of peanuts milk and skimmed milk powder together with the starter culture of *Lactobacillus bulgaricus*, and *Streptococcus thermophilus*. The skimmed milk powder was added to peanuts milk at the concentration of 0% (T₁), 5% (T₂), 10 % (T₃), and 15% (T₄). The physico-chemical (moisture, ash, fat, pH, titratable acidity, protein, total soluble solids, and total solids) and sensory characteristics (colour, taste, texture, aroma and overall acceptability) of freshly made yoghurts were analyzed according to AOAC (2002) methods.

Moisture, ash, fat, pH, titratable acidity, protein, total soluble solids, and total solids were significantly difference ($p < 0.05$) among the treatments at day one. The results of this study revealed that with increased of skimmed milk powder concentration; the moisture content was ranged from 83.29 to 62.87%, total solid varied from 16.71 to 37.13%, ash content was increased from 1.06 to 2.16%, pH value decreased from 4.76 to 4.39, while titratable acidity was increased from 0.73 to 1.74%. And TSS in peanut

yoghurt was increased from 14.53 to 18.80% while fat content varied from 5.44 to 7.36% and protein content ranged from 11.52 to 20.64% with increased of skimmed milk powder concentration of peanut milk yoghurt. Organoleptic properties were evaluated through the panel of 20 members. Results of organoleptic characteristics revealed that, among all types of peanut yoghurts, peanuts milk based yoghurt fortified with 10% skimmed milk powder represented highest ($P \leq 0.05$) mean score of overall acceptability

The above four treatments were kept in a refrigerator at 4 °C for two weeks in order to assess their shelf life. Physico-chemical characteristics were analyzed at one week intervals and sensory characteristics were analyzed at the end of 2nd week during refrigerated storage. During storage periods, the moisture content was significantly ($p < 0.05$) increased and total solids, ash content, total soluble solids, fat content, protein content were significantly ($p < 0.05$) decreased with increased of skimmed milk powder concentration. pH content was significantly ($p < 0.05$) decreased while titratable acidity was increasing with increased of skimmed milk powder concentration of peanut yoghurt. Peanuts milk based yoghurt fortified with 10% skimmed milk powder (T_3) represented highest ($P \leq 0.05$) mean score of overall acceptability for stored peanut yoghurt at the end of 2 weeks period. Finally, it could be concluded that the peanut yoghurt fortified with 10 % skimmed milk powder (T_3) can be kept in refrigerator for 2 weeks without spoilage and with good nutrient composition.

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