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An Evaluation of the Nutritional and Physicochemical Properties of Candies from Imitation Milks

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Abstract

Milks manufactured from plants such as soybeans, coconuts and groundnuts, when carefully formulated, can be of considerable importance nutritionally and produced at a lower cost than natural milk. Plant milks are quite nutritious and only slightly different from animal milk in their composition. One of the ways of utilising animal milk is in the production of candies. However, candies made from animal milks are quite expensive and not readily available in developing countries hence the consumption of candies is regarded as being luxurious.

In this study, imitation milks from soybeans, coconuts, and groundnuts were utilised as raw materials in the production of candies. The nutritional composition of these crops greatly reduced due to processing procedures as they were processed into candies. Nutritional, physicochemical and sensory evaluation of these products were analysed and compared with candies from animal milk. Plant-source candies compared favourably well with dairy-source candies in all the measured properties. The highest protein level of $6.43 \pm 0.08\%$ was recorded in soy-candy. The candies had low levels of fat which was an advantage for the keeping quality of the candies as chances of rancidity would be reduced. The moisture content was between 4.37 ± 0.06 – $5.93 \pm 0.03\%$. Microbial growth is directly linked to moisture content and water activity of food hence at this moisture content the candies can be stable under adequate storage conditions. The results of sensory evaluation indicated that coconut candies, groundnut candies and dairy-candy were given same preference in all quality attributes. The inherent unpleasant flavour of soybeans negatively affected the panellists' preference for soy-candy.

Large-scale production of candies from imitation milks is a way of expanding the use of under-utilised crops in some developing countries and also creation of job-opportunities as well as encouraging scientific researches on other crops for food products development.

Keywords: Candies, imitation milk, nutritional value, physicochemical properties, sensory evaluation