

**NUTRITIONAL & ORGANOLEPTIC CHARACTERIZATION  
OF PROTEIN RICH FRUIT & NUT BAR INCORPORATED  
WITH PALMYRAH (*Borassus flabellifer* L) FRUIT LEATHER**

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## ABSTRACT

Although palmyrah fruits have excellent chemical and physical properties for new food product development, it is seasonal and not exploited properly. Hence the study aimed to develop a palmyrah fruit incorporated fruit and nut bar. Palmyrah fruits were blanched in hot water for 10 minutes and 10 % gelatin was added prior to drying and made into fruit leather. It was compared with commercial fruit leather for its colour, texture and taste. Prepared palmyrah fruit leather retained its natural colour and the texture and taste were better than commercial product. Hence it was used in the product formulation. The final formula of fruit and nut bar was selected through optimization of palmyrah fruit leather (25 g, 35 g, and 45 g), milk powder (48 g, 60g, 72 g) and condensed milk (32 g, 40 g, 48 g) and sensory evaluation (ranking test) by 30 untrained panellists using 9 point hedonic scale. Full factorial design (n=14, without replicates) was used for optimization of the above three and other ingredients desiccated coconut (10 g), coconut milk powder (7 g), peanuts (35 g), sugar (64 g) and salt (0.224 g) were kept same in all treatments. In the selected formula peanuts and sugar were replaced with soybeans (50 %, 100 %) and treacle (100 %) respectively and the final formula was selected through sensory evaluation as done previously. Statistical analysis of the result of sensory evaluation revealed that palmyrah fruit incorporated fruit and nut bar with 25 g pulp, 60 g milk powder, 40 g condensed milk, 17.5 g peanut, 17.5 g soybeans and 64 g treacle scored the highest. The analysis of selected product revealed that it contained 6.22 % moisture, 3.62 % ash, 0.28 % acid insoluble ash, 21.8 % crude protein, 15.68 % crude fat, 0.36 % crude fiber, 3.89 % total sugar, 0.58 % reducing sugar, 0.17 % phosphorous and 19.8 KJ g<sup>-1</sup> energy. The bulk density was 0.9209 g cm<sup>-3</sup>. For shelf life study moisture, microbial count and visual observations (colour, texture) were done for the product kept under ambient conditions in metallic polystyrene bags and it was not spoiled till the end of study period of two months.

**Key words:** blanching, palmyrah, fruit and nut bar, leather, protein