

Development of Fruit Incorporated Paneer Based Dairy Snack Bar

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Dairy based snack bars which can be used as “on-the-go” products are currently rare in the market. Paneer is an un-ripened soft cheese variety obtained by acid and heat coagulation. This study was conducted to develop a fruit incorporated paneer based dairy snack bar. Citric acid and vinegar (1:3), a 2% solution was used to coagulate the cow milk. Mango pieces were osmotically dehydrated using 50% of sugar and drying at 60°C for 30 minutes. Paneer snack bars were formulated using different stabilizers (corn flour, tylose powder®, guar gum, and xanthan gum) at different incorporation levels, while chocolate coated and non-coated. The best stabilizer for the product was selected using 4 sensory evaluations with 30 untrained panelists according to the 9-point hedonic scale. Proximate analysis (AOAC, 2016) and antioxidant properties (DPPH radical scavenging activity) were measured. Sensory attributes, microbial analysis, color (colorimeter), texture (texture analyzer), pH, titratable acidity, and peroxide values were evaluated at a 7-day interval for 28 days of refrigerated storage (4±1°C) for the finalized product. The guar gum incorporated snack bars gave the highest notes for sensory attributes (above 7). Results revealed that the non-coated sample had the highest protein content of 14.83±0.31%, while the coated sample had 12.37±0.42%. Ash, moisture and fiber contents were significantly higher ($p < 0.05$) in non-coated samples as 1.05±0.04%, 34.40±2.08%, 42.07±1.53%, respectively. Fat content was higher in the coated sample as 37.12±1.64%. The hardness of the coated samples was slightly decreased by 0.97±0.03 N within the storage time. Acidity, pH, and peroxide values of the coated and non-coated samples were significantly altered ($p < 0.05$). In conclusion, a fruit incorporated paneer snack bar can be successfully formulated, which indicates a possibility to develop a novel dairy product with enhanced nutritive properties with one month of shelf life using the guar gum as the stabilizer.

Keywords: Paneer, Snack bar, Guar gum, Mango incorporated, Coated