

Manufacturing of Ice-cream Cones using Cassava, Soybean, Black-gram, Cowpea and Green-gram Flours as Major Ingredients

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Ice-cream consumption has been increasing due to changes in lifestyles and food habits. Serving ice-cream in cones is one of the most popular modes. As these products are not considered a healthy part of a regular diet, this study focused on developing an ice cream cone with added value. Nine formulations containing different proportions of flours such as cassava (38 to 51%), soybean (20 to 25%), black-gram (10 to 12.5%), cowpea (10 to 12.5%) and green-gram (5.45 to 7.99%) as major ingredients, and sugar (2.5 to 3.45%), table salt (0.05 to 0.06%) and baking powder (0.5 to 1%) as minor ingredients were the treatments. Amount of water used in 9 formulations increased from 140 to 160 ml with increase in the percentages of cassava flour from 51 to 38%. Hardness and water holding capacity (WHC) of the samples (9 formulations) and of a market sample were measured. Hardness of the market sample was 5.98 ± 0.01 N, which was not significantly different ($p > 0.05$) from the formulation containing 45.6, 5.7, 11.4, 11.4 and 22.8% of cassava, green-gram, cowpea, black-gram, and soybean flours as major ingredients, respectively, and 2.8, 0.05 and 0.75% of sugar, table salt and baking powder as minor ingredients, respectively. Lowest WHC of 19.79 ± 1.07 was evident in the same formulation, which was similar in hardness to the market sample. Therefore, the formulation resulted in hardness and WHC similar to the market sample was selected as the most suitable formulation for producing ice-cream cones. Moisture, total ash, crude protein, crude fat, and crude fiber percentages of the selected formulation were 5.42 ± 0.46 , 2.58 ± 0.02 , 14.39 ± 0.21 , 6.07 ± 0.05 and 4.11 ± 0.09 , respectively, and of the water activity was 0.45 ± 0.02 .

Keywords: Black-gram, Cassava, Cowpea, Green-gram, Ice-cream cones, Soybean

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