

## FORMULATION AND OPTIMIZATION OF A GREEK-STYLE BUFFALO CURD DESSERT INCORPORATING STRAWBERRIES TO ENHANCE NUTRITIONAL AND SENSORY QUALITIES

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This study is focused on the development of a Greek-style buffalo curd dessert incorporating strawberries, addressing the growing demand for nutritious and functional dairy products in Sri Lanka. Buffalo milk is high in protein and fat, while strawberries add antioxidants. The formulation was optimized through sensory evaluations. First, whey removal times of 2, 4, and 6 hours were evaluated by 32 untrained panelists using a 5-point hedonic scale to assess the appearance, texture, consistency, flavor, and overall acceptability, leading to the selection of the preferred duration. Next, sugar-to-strawberry ratios (9:10, 10:10, and 11:10) were tested on sweetness and overall acceptability by 34 untrained panelists with a 3-point hedonic scale, applying the selected whey removal time from the initial test. Finally, the addition of 25% and 35% strawberry pulp was compared by 46 untrained panelists for appearance, odor, taste, texture, and overall acceptability. Statistical analysis, including descriptive statistics and ANOVA, was conducted at each stage to determine the optimal sensory attributes for the final formulation. The optimal combination from sensory panelists was identified as a two-hour whey removal time, a 10:10 sugar-to-strawberry ratio and 35% sugar-added strawberry pulp with chunks as a percentage of the total volume. The nutritional analysis showed 0% salt content (as sodium chloride), 0% total dietary fiber, 19.8% sugar, 22.7% carbohydrate, 6.5% fat, 0.4% ash, 3.5% protein, 4.68% saturated fatty acid, 1.73% monounsaturated fatty acid, 0.09% polyunsaturated fatty acid, 0.18% trans fatty acid, energy 163.3 kcal and 16.3 mg sodium (as Na) per 100g of the product. The pH, titratable acidity and color ( $L^*$ ,  $a^*$ ,  $b^*$ ) were  $3.9 \pm 0.10$ ,  $0.9 \pm 0.05\%$ ,  $73.8 \pm 0.53$ ,  $9.3 \pm 0.56$  and  $10.1 \pm 0.41$  respectively. There was no significant microbial or physicochemical deterioration throughout 14 days of storage. Thus, strawberry-incorporated Greek-style buffalo curd dessert can be successfully manufactured with a 14-day shelf life.

**Keywords:** Functional food, Nutritional enrichment, Sensory optimization, Shelf life, Whey removal