Formulation And Standardization of Coco Flower Burfi

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Abstract- The present study was carried out to develop a nutritious and value-added confectionery product by incorporating coconut inflorescence powder into traditional coconut burfi. Coconut inflorescence, also known as spadix, is an underutilized part of the coconut palm and is rich in natural sugars, vitamins, minerals, antioxidants, and amino acids. The main objective of this research was to improve the nutritional quality of burfi while promoting sustainable utilization of coconut by-products. A preliminary market survey was conducted to understand consumer preferences and the demand for innovative and functional coconut-based products. Based on the survey results, coconut inflorescence powder was incorporated into burfi at three different levels, namely 5%, 10%, and 15%, along with a control sample without incorporation. The burfi was prepared using standard ingredients such as coconut, jaggery, ghee, nuts, and cardamom following standardized laboratory procedures. Sensory evaluation was carried out by a panel of judges using a five-point hedonic scale to assess appearance, colour, flavour, taste, texture, and overall acceptability. Among all formulations, the 10% incorporated sample showed the highest overall acceptability score (4.6/5), indicating an optimal balance between sensory quality and nutritional enhancement. Nutrient analysis of the standardized product revealed improved levels of protein, fibre, carbohydrates, fat, and essential minerals such as calcium, phosphorus, and iron. Shelf-life and cost analysis indicated that the product was stable under proper storage conditions and economically feasible, with a production cost lower than similar commercial products. The study concludes that coconut inflorescence powder can be successfully used as a functional ingredient in burfi preparation, contributing to product diversification, nutritional improvement, and value addition in the coconut processing industry.

Keywords- Coconut inflorescence, Burfi, Value addition, Functional food, Sensory evaluation, Nutritional enhancement

I.INTRODUCTION

Traditional Indian sweets such as burfi are widely consumed for their taste and cultural importance, but they are often high in sugar and fat with limited nutritional value. Increasing awareness of health and wellness has created a demand for value-added traditional foods that combine sensory appeal with improved nutrition. Coconut inflorescence sap, known as *neera*, is obtained from the immature spadix of the coconut palm (*Cocos nucifera*). It is a rich source of natural sugars, vitamins, minerals, antioxidants, and bioactive compounds, making it a healthier alternative to refined sweeteners. Products derived from coconut inflorescence, such as coconut sugar and jaggery, have gained attention due to their functional and commercial potential. Incorporating coconut inflorescence into burfi offers an effective approach to enhance its nutritional profile while retaining traditional characteristics. Therefore, the present study aims to formulate and standardise coconut inflorescence incorporated burfi and to evaluate its sensory acceptability, nutritional composition, shelf-life potential, and cost effectiveness.

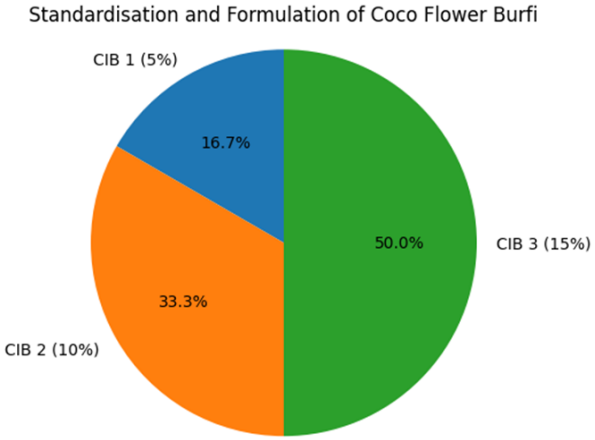
II. MATERIALS AND METHODS

2.1 Raw Materials

Coconut inflorescence, coconut, jaggery, ghee, almond, cashew nut, walnut, and cardamom were procured from local sources. The coconut inflorescence was washed, sun-dried, and powdered. Burfi was prepared by incorporating coconut inflorescence powder at 5%, 10%, and 15% levels. Grated coconut was roasted in ghee and mixed with jaggery syrup, coconut inflorescence powder, and powdered nuts. The mixture was set, cooled, and cut into pieces. Sensory evaluation, nutritional analysis, packaging, and cost analysis were carried out using standard methods.

2.2 Standardisation and Formulation

The pie chart represents the proportion of coconut inflorescence powder incorporated in the three formulations of coco flower burfi. The formulations consisted of CIB 1 (5%), CIB 2 (10%), and CIB 3 (15%) levels of coconut inflorescence powder. These variations were prepared to standardise the product and to evaluate the effect of different incorporation levels on sensory acceptability and nutritional quality.



2.3 Sensory Evaluation

The samples were assessed on appearance, colour, flavour, texture, taste, and overall acceptability by a semi-trained panel of ten people using a five-point hedonic scale (1 = Dislike very much, 5 = Like very much).

2.4 Nutrient Analysis

Nutrient composition of coco flower burfi (per 100 g)

Nutrients	Nutritive Value
Moisture (g)	100.8
Protein (g)	13.22
Fat (g)	89.83
Carbohydrates (g)	52.73
Fibre (g)	12.82
Calcium (mg)	55.85
Phosphorous (mg)	257.30
Iron (mg)	2.75

The nutrient analysis of coco flower burfi revealed appreciable levels of protein, fibre, calcium, phosphorus, and iron, indicating enhanced nutritional quality due to the incorporation of coconut inflorescence powder.

2.5 Cost Analysis

The cost of ingredients and packaging was used to determine the production cost per 100 g. Cost analysis revealed that the production cost of coco flower burfi was approximately ₹120 per 100 g, with a market price of ₹130 per 100 g, demonstrating its economic feasibility compared to commercially available products.

III. RESULTS

The sensory evaluation of coconut inflorescence incorporated burfi revealed noticeable differences among the formulations. Among the three variations, the burfi containing 10% coconut inflorescence powder (CIB-2) recorded the highest overall acceptability score of 4.6 on a five-point hedonic scale. This sample showed better scores for colour, flavour, taste, texture, and appearance compared to the other formulations. Nutrient analysis of the standardised product (CIB-2) per 100 g showed moisture content of 100.8 g, protein 13.22 g, fat 89.83 g, carbohydrates 52.73 g, and fibre 12.82 g. The product also contained appreciable amounts of calcium (55.85 mg), phosphorus (257.30 mg), and iron (2.75 mg), indicating improved nutritional quality due to coconut inflorescence incorporation

IV. DISCUSSION

Sensory evaluation showed that the burfi with 10% coconut inflorescence powder (CIB-2) achieved the highest overall acceptability score (4.6/5), indicating optimal flavour, colour, and texture. Lower scores in CIB-1 (5%) and CIB-3 (15%) suggest that too little or excessive incorporation affects palatability. Nutritional analysis confirmed that coconut inflorescence enhanced protein, fibre, and mineral content, including calcium, phosphorus, and iron, improving the functional value of the product. Cost analysis demonstrated that CIB-2 is economically feasible compared to similar commercial products. Therefore, moderate inclusion of coconut inflorescence provides a balance of sensory quality, nutrition, and commercial viability.

V. CONCLUSION

The present study successfully formulated and standardised coconut inflorescence incorporated burfi

with varying levels of coconut inflorescence powder (5%, 10%, and 15%). Among the formulations, the burfi containing 10% coconut inflorescence powder (CIB-2) was found to be the most acceptable in terms of sensory attributes, including colour, flavour, taste, texture, and overall acceptability. Nutritional analysis confirmed that the product is rich in protein, fibre, carbohydrates, and essential minerals such as calcium, phosphorus, and iron, indicating its potential as a functional and nutrient-dense sweet. Cost evaluation demonstrated the product is economically feasible compared to commercial alternatives. Overall, CIB-2 provides a healthier, value-added traditional sweet, combining nutritional benefits, sensory appeal, and commercial viability, and can be recommended for wider consumption and commercialization.

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