

Study on Preparation of Coconut *burfi* Fortified with Beetroot (Beetroot *Burfi*)

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Abstract: The present investigation was aimed to fortified beetroot in coconut burfi to formulate a novel type of burfi. Beetroot burfi is prepared from different proportions of coconut and beetroot i.e. 40:15(T₁), 30:25(T₂), 30:30(T₃) and it is compared to coconut burfi of market (T₀). The combination T₂ was superior with the rating of 8.71 in the mouth fell followed by T₃ occurred at 8.29. The highest rating for taste of T₂ was 8.43 which were followed by T₃ as well as T₁ at 8.14. The flavor and appearance of T₂ combination was superior at 8.14. The colour rating for the combination of T₂ was 8.29 whereas combination T₃ and T₁ occurred at 8 and 7.29, respectively. The sensory score for overall acceptability of Beetroot Burfi of treatments T₀, T₁, T₂ and T₃ were 7.86, 8.29, 8.57 and 8.29, respectively. So, there it was observed that 25 per cent (T₂) level of grated beetroot was most acceptable and rated between like very much to like extremely for the all sensory attributes.

Keywords: Coconut, Grated Beetroot, Burfi, Sensory Evaluation

1. Introduction

Burfi is one of the most popular khoa based sweets all over India. *Burfi* is a sweet which is made by the heating a mixture of fresh milk, grated coconut, grated beetroot and sugar near homogenous consistency. Then cooling is done followed by the cutting into the small desired shapes. There are several varieties of *burfi* available into the market depending on the additives, viz; besan *burfi*, plain *burfi*, groundnut *burfi*, cashewnut *burfi*, coconut *burfi*, moong dhal *burfi*, chocsidu *burfi*, rawa *burfi* and any fruit flavored *burfi*. Not only marketing and production of *burfi* in general is mostly confined to the 'halwai' (traditional sweets-makers) but also in the market only few commercial manufacturing units exist. For this the main reason is poor keeping quality with the unpredictable shelf life. Unpacked product shelf life is near about 7-10 days.

For the preparation of the *burfi* there is different types of fruits are also used in the Maharashtra such as wood-apple, orange, bear, fig, mango papaya and spota etc. Enhancement the acceptability of the *burfi* to the choosy classes as well as masses by these fruits (D. K. et al., 2015).

Beetroot (*Beta vulgaris*) is also known as garden beet which is one of the oldest vegetable known to the mankind. In India beetroot mainly cultivated in Haryana, Uttar Pradesh, Himachal Pradesh, Maharashtra and Tamil Nadu. It contains antioxidant property (Harsh, 2016) and known to be a powerful antioxidant. Beetroot is beneficial for antitumor, carminative, emmenagogue, and hemostatic and renal protective. (Ali, 2016). It is from one of the natural food boosts the energy in athletes because it has highest sugar as well as nitrates content. In dairy and meat products Betaine (Betacaine pigment responsible for its red colour) is used as a natural food colour (Harsh, 2016). Today the beetroot is still championed as a universal panacea. Beetroot is not only a good tonic for health but also one of the original "super foods" (K. B., 2014). The development of the Beetroot *Burfi*

as an indigenous sweet product prepared from the grated coconut, grated fresh beetroot, milk and sugar. To provide the highly nutritious and healthy product. The present study was undertaken to assess the quality of Beetroot *Burfi*.

2. Materials and Methodology

Raw materials for beetroot *burfi* production:

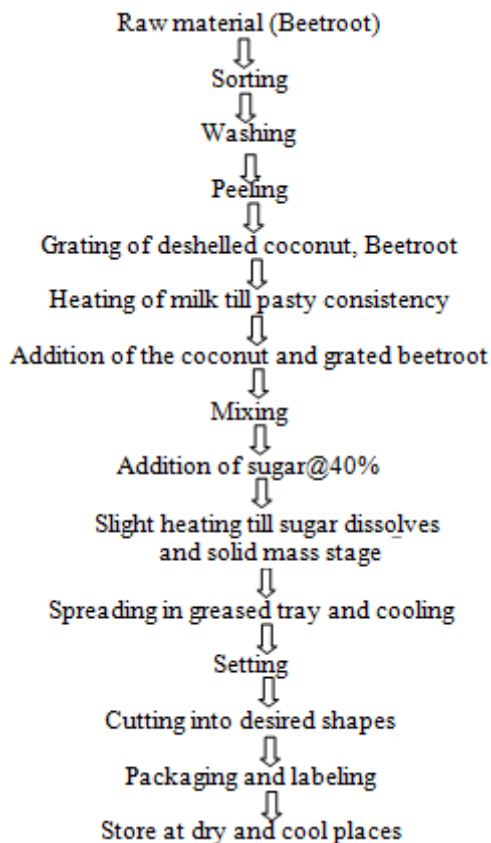
- **Coconut:** Fresh, matured coconut without rancid flavor is selected. Deshelled coconuts are used for further *burfi* processing.
- **Beetroot:** Fresh, mature, sound beetroots were purchased from market yard.
- Good quality sugar and milk were purchased from retail store.

For the manufacturing of Beetroot *Burfi*, following treatment combination of coconut and beetroot was studied. Formulation of the Beetroot *Burfi*:

Sr. No.	Ingredients	Quantity (gm)			
		Control(T ₀)	T ₁	T ₂	T ₃
1.	Sugar	45	40	40	40
2.	Coconut	50	40	30	30
3.	Beetroot	-	15	25	30
4.	Milk	5	5	5	10
Total	100	100	100	100	100

Coconut *burfi* is prepared by the own standardized recipe by using the correct proportion which is decided on the basis of sensory analysis as shown below.

Flow diagram for preparation of Beetroot *Burfi*:



Physical characteristics of the Beetroot burfi:

- **Diameter of Burfi (Charis et.al., 2015)**
The average value was taken for measuring the diameter by laying the six burfi's edge to edge with the help of a measuring tape rotating them 90C and again measuring the diameter in cm.
- **Thickness and Weight of Beetroot Burfi (Charis et.al., 2015)**
Measuring the average thickness by keeping the six burfi's on top of each other for measurement thickness. Weight of products was measured as average of values of four individual products with the help of digital weighing balance.

3. Observations and Assessment

Nutritional composition of beetroot burfi per 100 gm (By using method from AOAC, 1980)

Nutritional Information	Per 100g
Energy (Kcal)	374.16
Iron (gm)	0.5
Fat (gm)	18.5
Fiber (gm)	4.2
Ash (gm)	1.5
Protein (gm)	1.1
Carbohydrate (gm)	67.24
Moisture (%)	6.96

Sensory Evaluation of Beetroot Burfi

Consumer Acceptability

It was found from the present investigation that, overall acceptability for T₂ was 8.57 followed by combination of T₁ and T₃ was 8.29 and T₀ is 7.86 of respondents between like

very much to like extremely for all sensory attributes. 95% consumer respondents that, the beetroot burfi did not remind them of any other burfi products and there was no need for improvement of the product. 2% mentioned that, the product reminded them of carrot burfi and cashew burfi. 2% respondents suggested that, the product should be less colored. 1% respondents suggested that, the product should be less sweet.

Sensory Evaluation chart

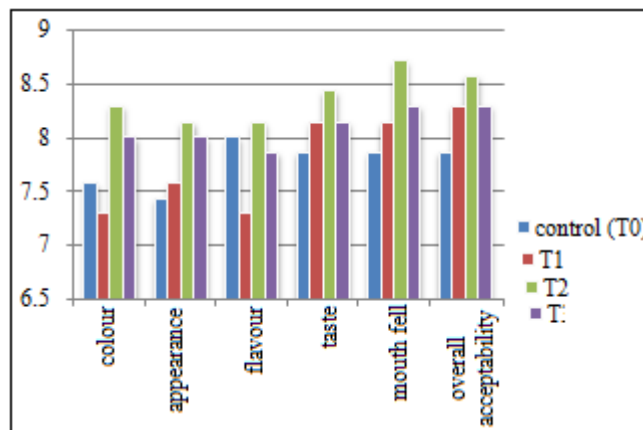


Figure: Sensory evaluation for beetroot burfi

4. Conclusions

The fortification of beetroot in coconut burfi will improve the nutritive value of a product. People demand the innovative product with highly nutritious content. As beetroot have lots of benefits so there is also people demand for this product. Beetroot burfi with the combination T₂ (25% grated beetroot) resulted into a product of better choice and with the highest rating for colour, appearance, flavor, taste, mouth feel and overall acceptability is 8.29, 8.14, 8.14, 8.43, 8.71 and 8.27 respectively. Hence, it was concluded that the level of addition of grated beetroot could be done at the optimum level of 25% at Burfi.

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