Study on Preparation of Coconut burfi Fortified with Beetroot (Beetroots 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 T1 was superior with the rating of 8.71 in the mouth feel followed by T3 occurred at 8.29. The highest rating for taste of T2 was 8.43 which were followed by T1 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 T1 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, chocsida 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 form 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:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Ingredients</th>
<th>Quantity (gm)</th>
<th>Control(T0)</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Sugar</td>
<td>45</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>2.</td>
<td>Coconut</td>
<td>50</td>
<td>40</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>4.</td>
<td>Milk</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

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 90°C 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)

<table>
<thead>
<tr>
<th>Nutritional Information</th>
<th>Per 100g</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy (Kcal)</td>
<td>374.16</td>
</tr>
<tr>
<td>Iron (gm)</td>
<td>0.5</td>
</tr>
<tr>
<td>Fat (gm)</td>
<td>18.5</td>
</tr>
<tr>
<td>Fiber (gm)</td>
<td>4.2</td>
</tr>
<tr>
<td>Ash (gm)</td>
<td>1.5</td>
</tr>
<tr>
<td>Protein (gm)</td>
<td>1.1</td>
</tr>
<tr>
<td>Carbohydrate (gm)</td>
<td>67.24</td>
</tr>
<tr>
<td>Moisture (%)</td>
<td>6.96</td>
</tr>
</tbody>
</table>

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**

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 resulted into a product of better choice and with the highest rating for colour, appearance, flavor, taste, mouth fell 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.

References


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[9] Sangeeta A. (Dehydration of Tender coconut) Beverage and Food world May 2012, Volume 39, Number 5 (SR-422)