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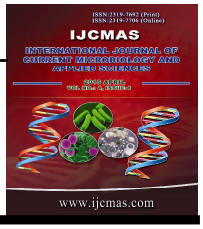

Original Research Article

A Comparative Study of Physicochemical and Sensorial Properties of Indian Desiccated Dairy Product Ujani basundi and Basundi

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A B S T R A C T

The investigation was carried out to evaluate the chemical as well sensory quality of Ujani basundi and basundi. Variations in composition of Ujani basundi and *basundi* samples observed due to rate of concentration of milk, higher level of sugar addition and initial quality of milk used in preparation of these product. Ujani basundi is more concentrated than the ujani basundi therefore it got brown color and attractive appearance. It was observed to be sweet with pronounced caramelized flavor in bothe products. The Ujani basundi has a more thick body than the basundi, which is main characteristic of this product. Ujani basundi found higher percentage of constituents than the basundi.

Keywords

Ujani basundi, Basundi, Concentrated product, Caramelized

Introduction

India is multi religious country several festivals are celebrated round the year. Hence many times during this festivals or at the happy movement sweets are always offered to the relatives, friends, neighborhood and those whom they known very well. Not only due to festivals or due to happy moment's sweets are distributed among the people, but round the year, they purchase sweet to consume, they have occupied the permanent place in their heart due to characteristic taste, flavor, body and texture of this popular sweetmeat. Round the year various occasion always happen such as passing exam, child birth, new house, new job, marriage ceremony, birthday, promotion etc, hence by keeping in mind such scope and opportunity to the indigenous dairy products sweetmeat makers (*halwais*) prepare various delicious sweetmeats. As result about 50 to 55 per cent of milk produced is converting by the traditional sector (*halwais*) into variety of Indian milk products (Patil, 2002 and Gupta, 2007).

India's traditional dairy product sector is poised for rapid expansion with the result of modern process technologies in the production of *mithais*. The rising demand for packaged, fresh dairy products is widening the base of the modern dairy sector (Aneja, et al., 2002). There is a long list of milk-based sweets prepared by combining one or more indigenous products with certain non-dairy ingredients. They are value added products generating high profits. Their demand is influenced by the nutritional value and taste.

Basundi is one of the traditional dairy products. No references yet available regarding the exact origin of *basundi,* but it have been prepared over several centuries in the western and southern parts of India (Aneja, et al., 2002). The product has a relatively thick creamy consistency, white to light brown color, sweetish caramel aroma and soft textured flakes uniformly distributed throughout the product mass. The *Ujani basundi* is the heat desiccated indigenous dairy product prepared by the addition of 10% sugar level (w/w) and concentrated to 3.0X (including sugar). It was observed to be sweet with pronounced caramelized flavor. The product has a more thick body than the normally present in basundi, which is main characteristic of this product. The product appears the granular texture. The color of the product appeared brown. This product is very much popular in Ujani and around villages as well as all over the Latur district (Maharashtra state) and border areas of Maharashtra and Karnataka (Gaikwad et al., 2009). Therefore an attempt has been made to compare the quality of both concentrated dairy products Basundi and Ujani basundi.

Materials and Methods

Ujani basundi manufactured in laboratory and basundi samples collected from the local market were subjected to sensory evaluation on 9- point hedonic scale (Peryam and Pilgrim, 1957) by a panel of 6 judges from the institute. The samples of *Ujani basundi* and basundi were subjected for chemical analysis. The samples were analyzed for chemical composition as recommended by Patel and Upadhyay (2003a) viz. Fat using method as per Indian standards (Sp:18, part XI,1981), Protein by AOAC method (2005), Sucrose volumetrically by Lane Eynon method (Sp:18, part XI,1981), Ash (Sp:18, part XI,1981), and Moisture (Sp:18, part XI,1981). Statistical analysis of mean was carried out as per Snedecor and Cochran (1994).

Result and Discussion

Chemical quality of collected *Ujani basundi* samples

The moisture content of *Ujani basundi* and basundi is presented in Table, 2. Ujani basundi is a concentrated dairy product (Gaikwad and Hembade, 2010) therefore the results showed that the moisture content in *Ujani basundi* observed 30.56% which was lower than basundi (46.53%). The variation in moisture attributed due to high concentration of milk in Ujani basundi. Values of Ujani basundi was also higher than those of De, (1980) and Patel and Upadhyay, (2004). The fat content of *Ujani basundi* was 14.13% which was higher than the basundi (10.65%) which was also higher than those of Patel and Upadhyay, (2004). The higher level of concentration might be responsible for higher fat values in final product. Sucrose content observed very high than that of basundi (26.58%) prepared. *Ujani basundi analyzed* for protein content. The protein content observed 10.59% which was also higher that of basundi (7.90%). The percentage of ash in *Ujani basundi* samples observed 1.85% which was also higher than

that of basundi (1.40%). Patel and Upadhyay, (2001) also reported variations in chemical quality of *basundi* sold in Gujarat state.

Sensory quality of collected *Ujani basundi* and *basundi* samples

The sensory scores for flavor, body and texture and color and appearance and sensorial characterization of *Ujani basundi* and *basundi* are given in Table, 1 and Table, 3 respectively. Caramel, burnt and sweet flavor were found in Ujani basundi samples as it might be found due to high heat treatment and addition of high sugar content (McKenna, 1988). Ujani basundi sample was more concentrated as compared to basundi hence it helped to develop caramel flavor. Therefore the score obtained for flavor in *Ujani basundi* was 8.64±0.93 whereas basundi obtained 7.9±1.43. It is necessary to have a certain level of fat, sucrose and concentration of total solids to obtain a product with desirable body and texture (Patel and Upadhyay, 2004).

Table.1 Sensory quality of collected Ujani basundi and basundi samples

Sr. No.	Type of product	Sensory evaluation		
		Color and appearance	Body and texture	Flavor
1	Ujani basundi	8.29±0.86	8.32±0.86	8.64±0.93
2	Basundi	8.0±0.93	8.1±1.43	7.9±1.43

Mean ±SD three replications

Table.2 Chemical quality of collected Ujani basundi samples

Sr. No.	Type of product	Chemical composition				
		Moisture	Fat	Protein	Sucrose	Ash
1	Ujani basundi	30.56±2.31	14.13±2.43	10.59±1.27	42.69±6.38	1.85±0.27
2	Basundi	46.53.±3.43	10.65±3.55	7.90±2.13	26.58±4.41	1.40±0.20

Mean ±SD three replications

Table.3 Characterization of Ujani basundi samples

Attributes	Type of product	Characterization
Color and appearance	Ujani basundi	Light brown
	Basundi	White to light
Body and texture	Ujani basundi	Thick body
	Basundi	Soft body, flow able
Flavor	Ujani basundi	Rich, caramel, pleasant and nutty
	Basundi	Caramel, pleasant
Taste	Ujani basundi	Sweet
	Basundi	Sweet

Basundi sample showed a soft body it might be caused duet to homogenization process (De, 1980). The Ujani basundi had more viscous than the basundi. Due to viscous body, attractive color and appearance of Ujani basundi appreciated by judges. Therefore score obtained for body and texture for *Ujani basundi* was 8.32±0.86 whereas the score obtained for basundi obtained 8.1±1.43. Thermal processing and presence of reducing sugars in milk favor Maillard reaction browning (McKenna, 1988). Addition of high amount of sugar and continuously evaporating and concentrating milk, such conditions lead to formation of Maillard reaction and hence product got brown color to Ujani basundi whereas basundi had creamy white color. Due to its attractive color and appearance the judges appreciated the product therefore the score obtained for color and appearance for *Ujani basundi* was 8.29±0.86 whereas the score obtained for Basundi was 8.0±0.93

From the present investigation it can be concluded that both products i.e. Basundi and Ujani basundi are the concentrated dairy products. Ujani basundi is more concentrated than the ujani basundi therefore it got brown color and attractive appearance. It was observed to be sweet with pronounced caramelized flavor in bothe products. The Ujani basundi has a more thick body than the basundi, which is main characteristic of this product. Ujani basundi found higher percentage of constituents than the basundi. Therefore from the present investigation it can concluded that the rising demand for fresh dairy products is widening the base of the modern dairy sector. There is a need to standardize such products so it will help in generating high profits and to generate employment.

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