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Studies on Physico-Chemical Analysis of Basundi Blended with Dried Anjeer

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A B S T R A C T

The study was conducted on the topic "Studies on Physico-chemical Analysis of Basundi Blended with Dried Anjeer." The different levels of dried anjeer 0, 2.5, 5, 7.5 and 10 per cent were tried in buffalo milk basundi. The requisite samples of *basundi* with different treatments were subjected for proximate analysis viz. fat, protein, Carbohydrate, moisture, total solid, sucrose and ash. The results obtained were statistically analyzed by using completely randomized design It was observed that addition of Dried Anjeer in *basundi* decreased (P^H 6.40-6.04), (acidity 0.46-0.52), (moisture 56.38 to 47.75 per cent), (fat 12.05 to 10.85 per cent) and increased (protein 8.30 to 9.05 per cent), (ash 1.70 to 2.22 per cent), (carbohydrate 21.09 to 30.64 per cent), (viscosity 59.34-75.61), and (total solid 43.69 to 52.24 per cent) content significantly in treated product(T2,T3,T4 and T5) as compared to control (T1).

Introduction

Basundi is traditional, concentrated and sweetened whole milk product having sweetish caramal and pleasant aroma, light to medium brown colour, thick body and creamy consistency with or without soft textured flakes that are uniformly suspended throughout the product.

It contains all the solids of milk in an appropriate concentration plus additional sugar and a dry fruit is consumed directly as a delicious sweet dish. It is most popular in Maharashtra, Gujarat and parts of Karnataka and is mainly prepared at home by the housewives on some special occasions like Festivals, weddings etc. and relished due to its rich caramal, pleasant and nutty flavor and thick consistency (Pagote, 2003; Satav *et al*., 2014).

Among the different dry fruits, anjeer (Ficascarica) is most important fruit providing dietary fiber and highest concentration of polyphenols, best source of minerals and vitamins. Anjeer has been linked to the reduced risk of cancer and type of diabetics. Dietary fibre is essential for human health which is recommended daily intake of 27-40 gm/day/adult.

Dietary fibre is edible part of plants or analogus to carbohydrates that are resistant to digestion and absorption in human small intestine with complete or partial fermentation in large intestine.

Materials and Methods

Treatment combinations

Following treatment combinations were considered for preparation of basundi blended with dried anjeer

T0= Basundi from buffalo milk (control)

T1= 98.5 parts milk +2.5 parts of dried anjeer

T2= 95 parts milk +5 parts of dried anjeer

T5 = 92.5 parts milk +7.5 parts of dried anjeer

T5 = 90 parts milk +10 parts of dried anjeer

Experimental Methodology

Basundi was prepared as per the method described by De (2011) with slight modification.

Physico-chemical analysis of *basundi* blended with dried anjeer

Determination of moisture, total solids, ash, sucrose

Determined by method as described in IS: SP (Part XI) 1981.

Determination of fat

Determined by Gerber´s method as in IS: 1224 (Part II) (1977).

Determination of protein

Protein content of b*asundi* was determined by Microkjeldhal method as described in BIS (1981).

Determination of Carbohydrate

Carbohydrate content was estimated by subtraction method

Statistical analysis

The data were analyzed statistically by using Completely Randomized Design (CRD) as per Panse and Sukhatme (1985).

Results and Discussion

Mean chemical composition of Basundi blended with dried anjeer

The mean Physico-chemical composition for control *basundi* (T1) and *basundi* with 2.5, 5 7.5 and 10 per cent dried anjeer (T1, T2, T3, T4 and T5) are presented in table 1.

Acidity

It is revealed from table1 that highest acidity of *basundi* for treatment T5 (0.52). As the level of dried anjeer increases the acidity of *basundi* increases. The lowest acidity was observed the in treatment T1 (0.46) i.e. control sample. This results are similar to Mukhekar (2014) the physico-chemical properties of *basundi* blended with kesar mango pulp were evaluated.

pH

It is revealed from table 1, that highest pH of *basundi* for treatment T1 (6.40). As the level of dried anjeer increases the pH value of *basundi* decreases. The lowest value of pH was observed the blended with 10 percent of dried anjeer. According to Mukhekar (2014) The physico-chemical qualities of *basundi* blended with kesar mango pulp were evaluated.

Viscosity

It is revealed from table 1, that highest viscosity of *basundi* for treatment T5 (75.61). As the level of

dried anjeer increases the viscosity of *basundi* increases. The lowest viscosity was observed the in treatment T1 (59.34) i.e. control sample. In that high level i.e. 7.5 % and 10 % ajeer level this might be due to more viscosity of *basundi* due to excess blending of dried anjeer.

This results are similar to findings of Mukhekar (2014) reported, the physico-chemical qualities of *basundi* blended with kesar mango pulp were evaluated. On an average *basundi* blended with kesar mango pulp of treatment 6.27, 6.10, 5.97, 5.92 and 5.85 pH, 0.38, 0.40, 0.42, 0.45, and 0.47 per cent acidity, 54.16, 60.25, 66.34, 70.79 and 74.30 viscosity.

Moisture

It can be seen from the table 1, that moisture content of *basundi* ranged from 47.75 56.38 per cent. The *basundi* prepared from 10% dried anjeer had minimum moisture content (47.75) followed by T1, T2, T3 and T4 of *basundi.* The *basundi* prepared from 10 % dried anjeer had minimum content from the results seen that the, as the level of dried anjeer increases, the moisture content of *basundi* decreases, this might be due to the high level i.e. 7.5 % and 10 % anjeer level this might be due to more viscosity of *basundi* due to excess blending of dried anjeer.

The findings are close agreement with the reports, Raut (2018) the result it was observed that addition of red pumpkin pulp in buffalo milk *basundi* decreased moisture (49.41 ± 0.08 to 46.69 ± 0.27 per cent.

Fat

It can be seen from the table 1, that fat content of *basundi* ranged from 12.05 to 10.85 per cent. It was further observed that the fat content decreases with the increase level of dried anjeer. The *basundi* prepared from 10% dried anjeer had minimum fat percent (10.85) followed by T1, T2, T3 and T4 of *basundi.* The *basundi* prepared from 10 % dried anjeer had minimum fat content from the results seen that the, as the level of dried anjeer increases, the fat percent of *basundi* decreases, this is due to the high level i.e. 7.5 % and 10 % anjeer level.

Protein

It can be seen from the table 1, that protein content of *basundi* ranged from 8.03 to 9.05 per cent. It was further observed that the protein content increases with increase in level of dried anjeer. The *basundi* prepared from 10% dried anjeer had maximum protein content (9.05) followed by T1, T2, T3 and T4 of *basundi.* The *basundi* prepared from 10 % dried anjeer had maximum protein while basundi prepared from 5 % dried anjeer had minimum protein content. It is observed that the, as the level of dried anjeer increases, the protein content of *basundi* increases, this might due to the high level i.e. 7.5 % and 10 % dried anjeer.

Ash

It can be seen from the table 1, that ash content of *basundi* ranged from 1.70 to 2.22 per cent. It was further observed that the ash content decreases. The *basundi* prepared from 10% dried anjeer had minimum ash content (1.70) followed by T1, T2, T3 and T4 of *basundi.*

The *basundi* prepared from 10 % dried anjeer had minimum ash content from the results seen that the, as the level of dried anjeer increases, the ash content of *basundi* decreases.

Carbohydrate

It can be seen from the table 1, that carbohydrate content of *basundi* ranged from 21.09 to 30.64. It was further observed that the carbohydrate content increases. The *basundi* prepared from 10% dried anjeer had maximum carbohydrate content (30.64) followed by T1, T2, T3 and T4 of basundi.

The *basundi* prepared from 10 % dried anjeer had maximum carbohydrate content from the results seen that the, as the level of dried anjeer increases.

Table.1 Mean chemical composition of *basundi* blended with dried anjeer

Treatment	T1	T2	T3	T4	T5
Acidity	0.46^{b}	0.47^{d}	0.49^{c}	0.51^{d}	0.52^{d}
P^{H}	16.40^{a}	6.30^{ab}	6.23^{abc}	$6.11b^{c}$	6.04^{c}
Viscosity	59.34^{c}	65.90^{d}	69.20^{c}	72.56^{b}	75.61^{a}
Fat	12.05^{a}	11.60^{ab}	11.61^{ab}	11.20^{bc}	10.85^{c}
Protein	8.30^{c}	8.60^{bc}	8.70^{b}	8.80^{ab}	9.05^{a}
Moisture	56.38^{a}	54.98^{b}	52.21^{c}	49.04^{d}	47.75^{d}
Carbohydrate	21.09^{c}	22.97^{d}	25.50^{c}	29.07^{b}	30.64^{a}
Total Solids	43.69^{d}	45.02^{c}	47.79^{b}	50.95^{a}	52.24^{a}
Ash	2.22^{a}	1.85^{b}	1.76^{b}	1.73^{b}	1.70^{b}

Fig.1 Preparation of *basundi* blended with dried anjeer

Receiving of buffalo milk

↓

Filtration

↓

Standardization of milk (6 % fat)

↓

Heating at simmering temperature (80-90^{0}C)

↓

Vigorously stirring-cum-scrapping

↓

Concentrate the milk volume to 35 per cent original milk volume

addition of sugar (@ 5% of original milk) and dried anjeer crush as per treatment

↓

Gentle heating till complete sugar dissolved and uniform mixing of anjeer

↓

Cooling at room temperature

↓

Storage at refrigeration temperature

Total solids

It can be seen from the table 4.13, that total solid content of *basundi* ranged from 43.69 to 52.25. It was further observed that the total solid content increases. The *basundi* prepared from 10% dried anjeer had maximum total solid content (52.24) followed by T1, T2, T3 and T4 of *basundi*. The *basundi* prepared from 10 % dried anjeer had maximum total solid content from the results seen that the, as the level of dried anjeer increases, the total solid content of *basundi* increases, this might due to high total solid content of anjeer.

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