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## Study on development and quality of fruits enriched Shrikhand prepared from mixing of buffalo and camel milk

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### Abstract

The present study was carried out to assess the best ratio of camel and buffalo milk mixing for shrikhand preparation. Camel milk was mixed with buffalo milk at different ratios (40:60, 50:50, 30:70 and 20:80%), respectively. The amount of shrikhand obtained from each batch was measured and yield of shrikhand obtained on the basis of amount of milk taken was calculated. The data obtained for yield of shrikhand obtained from different treatments of mix milk of camel and buffalo i.e. T<sub>1</sub>, T<sub>2</sub> and T<sub>3</sub> along with their total cost of production for shrikhand (₹/Kg). The camel milk had the lowest fat content therefore, lower yield of chakka obtained from camel milk. So mixing of buffalo milk and camel milk in quantity (70% buffalo milk and 30% camel milk) was done to increase yield, low production cost and to obtain better consistency of chakka for preparation of shrikhand. On the basis of sensory quality score, the fruits enriched (mango and banana) shrikhand obtained from highest overall acceptability score was obtained in shrikhand from mix milk of buffalo and camel.

**Keywords:** Chakka, yield, production cost, consistency, sensory quality

### 1. Introduction

In the western world, camel milk is experiencing a novel awareness in these days and even the FAO has stepped in promoting camel milk for consumers (Ramet, 2001) [22]. Camel milk is commonly used for various disease e.g. anti-cancer (Magjeed, 2005) [16], hypo-allergic (Shabo *et al.* 2005) and anti-diabetic properties (Agrawal *et al.* 2003) [1]. High content of unsaturated fatty acids contributes to its overall dietary quality (Karray *et al.* 2005; Konuspaveva *et al.* 2008) [12, 15]. Camel milk is rich in chloride. Chlorides contents ranged between 0.20 and 0.28 g per 100 g, respectively and the mean value (g per 100 g) was 0.26± 0.01 for chlorides (Khaskheli *et al.* 2005) [14]. Buffalo milk has a high fat content and can be preserved naturally for longer periods due to high peroxidase activity. Buffalo milk contains more calcium, better calcium: phosphorous ratio and less sodium and potassium compared to cow milk, making it a better nutritional supplement for infants. Buffalo milk is preferred for the preparation of western and traditional (indigenous) milk and dairy products and is superior in nutritional terms. In India 46% of total milk production consumed as liquid milk and 54% is converted into milk products ([www.nddb.org/statistics/milkproduction](http://www.nddb.org/statistics/milkproduction)).

Shrikhand is one of the most important fermented milk products, which derives its name from the Sanskrit word "Shikharani" which means curd made with sugar, aromatic (saffron) additives, fruits and nuts. It is popular in the western part especially in Maharashtra, Gujarat and Karnataka. Shrikhand is known for its high nutritional value, distinct flavor, taste, palatable nature and potential medicinal value. It is very refreshing particularly during summer months (Karche *et al.* 2015) [11]. Most fat-soluble vitamins A, D, E and K are also expected to be retained. Above all, milk conversion to shrikhand. Fruits enriched shrikhand are contain antioxidant properties as compared to normal shrikhand. Prepared rabri with incorporation of mango pulp improved sensory quality and acceptability of the product (Pawar, 2003) [20]. Banana fruit is source of starch, fibers, minerals (magnesium, calcium, potassium, phosphorus and manganese), and vitamine-B6. Raw and mature banana are used as a source of important

compound, such as carotenoids, phenolics, amines and phytosterols. It has numerous health benefits, for instance, enhances brain health, improves heart health, good for bones, enhances digestive health, valuable for diabetes, brightens the teeth, strengthens the immune system and help to treat diarrhoea, migraines, and anaemia Mengstu (2021) [17].

Mango (*Mangifera indica* L.) are rich source of fiber, vitamin A and C, essential amino acids, and a plethora of phytochemicals. Mango is extensively used in various traditional systems of medicine to prevent and treat several diseases. The health-promoting and disease-preventing effects of mango are attributed to a number of bioactive phytochemicals, including polyphenols, terpenoids, carotenoid and phytosterols, found in the leaf, bark, edible flesh, peel and seed. *M. indica* has been shown to exhibit various biological and pharmacological activities, such as antioxidant, anti-inflammatory, immunomodulatory, antimicrobial, antidiabetic, anti-obesity, and anticancer effects (Mirza *et al.*, 2021) [18].

### Material and Methods

Fresh camel milk was collected from camel dairy maintained at ICAR-NRC on Camel, Bikaner and fresh buffalo milk was collected from buffaloes maintained under the 'local buffalo dairy farm, Bikaner. All samples were collected manually in sterile bottles and were kept under chilled condition to perform the different experiments. Experimental trials were done to select a suitable ratio of camel and buffalo milk for shrikhand preparation. In preparation of shrikhand, whey removal from curd by muslin cloth to obtained chakka. Therefore, yield of shrikhand depends on fat percentage content of the milk and yield of shrikhand expected to be closely proportional to the increase in fat content of the milk. In trials yield of shrikhand obtained from two different types of milk was proportional 70:30 (Buffalo: Camel) to fat content of the respective milk.

### Solid ingredients

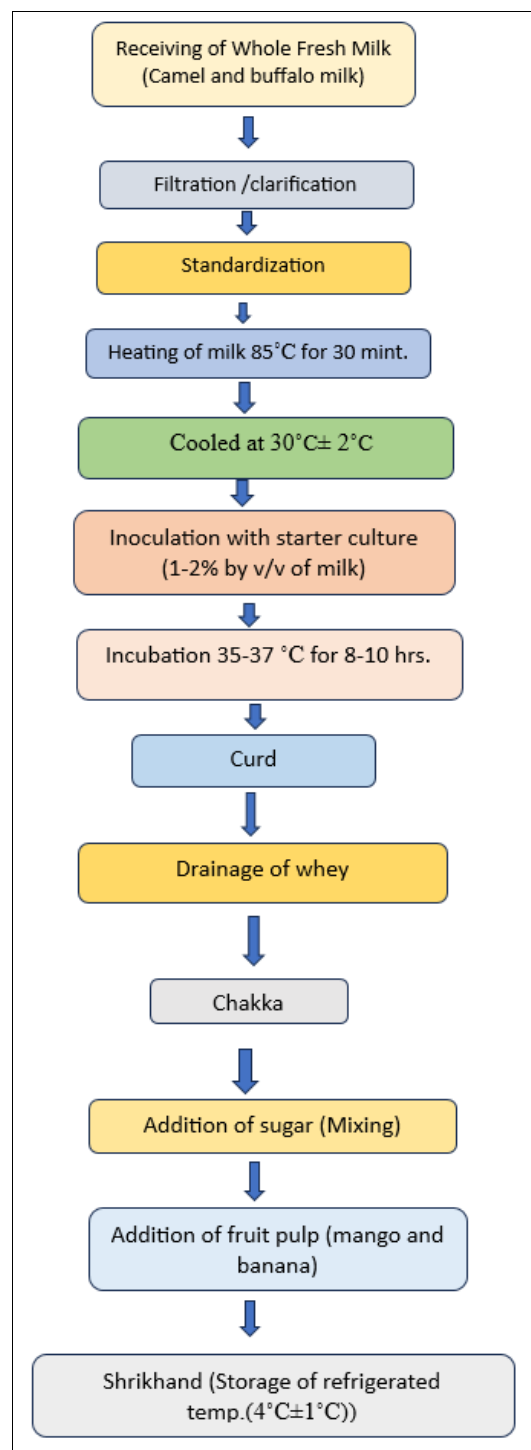
Mango and Banana used for incorporation in shrikhand to form fruit enriched shrikhand were purchased from local market of Bikaner in hygienic condition. Mango and Banana were processed in pulp form by using electric Mixer-cum-grinder.

### Formation and accessibility of fruits enriched shrikhand developed from buffalo and camel milk

There exist plenty of reviews and research studies on the manufacturing aspects and market qualities of Shrikhand. However, as the present study is restricted to the fruits enriched shrikhand prepared employing by formation of chakka, the review encompasses only the related studies of the selected fruits enriched shrikhand.

Similar work was also reported by many researchers who also used to preparation of shrikhand e.g. Sharma and Reutur (1992) [25], Aneja (2002) [2], Salunke *et al.* (2005) [23], Singh (2006) [27], Narayan and Lingam (2013) [19] and Thakur *et al.* (2014) [31]. Shrikhand is a semi-soft, sweetish and sour, whole milk product made from curd fermented with lactic acid. The curd is partially strained through a muslin cloth to remove the whey to produce a solid mass called chakka. This chakka is mixed with the required amount of sugar to yield shrikhand. The buffalo and camel milk (70:30) used for preparation of shrikhand was subjected to heating at 70 °C for 10 minutes. The milk was subsequently cooled to 28-30 °C. Inoculation with starter culture added at the rate of 1-2% by weight of milk. The curd or milk coagulum was allowed to settle for 10

minutes. The curd (Dahi) is partially strained through a muslin cloth to remove the whey and thus produce a solid mass called Chakka, the basic ingredient for Shrikhand. Then 40% sugar add in chakka, blender use for proper mixing to preparation of shrikhand and add the fruit pulp (mango, banana). Fresh and best quality mango and banana were procured from the local market. Fresh mango was washed thoroughly with tap water and kept for flash cooling to 5 °C. Further mango was peeled off and cut half vertically and pulp was separated using stainless steel knife and then homogenized using mixer grinder. Fresh and best quality banana was procured from the local market and washed with tap water and then peeled off using stainless steel knife and pulp was homogenized using mixer grinder under strict hygienic conditions.



**Fig 1:** Flow diagram for preparation of fruits incorporated buffalo and camel milk shrikhand

### Preparation of shrikhand

The amount of shrikhand obtained from each batch was measured and yield of shrikhand obtained on the basis of amount of milk taken was calculated. The data obtained for yield of shrikhand obtained from different treatments of mix milk of buffalo and camel.

T<sub>1</sub> - 80% buffalo milk + 20% camel milk

T<sub>2</sub> - 70% buffalo milk + 30% camel milk

T<sub>3</sub> - 60% buffalo milk + 40% camel milk

T<sub>4</sub> - 50% buffalo milk + 50% camel milk

Formulation of shrikhand was done by using different ratio (80:20, 70:30, 60:40 and 50:50) of buffalo and camel milk chakka. Best result obtained on the basis of yield and consistency of chakka by combination of 70% buffalo milk and 30% camel milk. Formulation of shrikhand was done by using different percentage (10%) of fruits mango and banana in single or in combination.

### Sensory Evaluation

The samples of different treatments camel and buffalo milk shrikhand prepared as per the formulations were subjected to sensory evaluation on 8 point hedonic scale by a panel of eight semi-trained members from academic staff and students of the department for various sensory attributes viz., appearance & colour, flavour, body & texture and overall acceptability using 8 point descriptive scale (Keeton, 1983), where '8' denotes 'Excellent' and '1' denotes 'extremely poor'. Buffalo and camel milk shrikhand samples were presented in plastic plates. All samples were marked with

digital code, and the order of presentation of samples was randomized for each panelist.

### Cost evaluation of the developed fruits enriched buffalo and camel milk shrikhand

The cost evaluations of the developed buffalo and camel milk shrikhand have been worked from prevalent market prices of all the ingredients (chakka, sugar, mango, banana) required for preparation of treatment shrikhand.

### Statistical analysis

All the experiments of study were repeated three times and samples were drawn in duplicate. Data collected during the present investigation were subjected to statistical analysis by adopting appropriate methods of analysis of variance as described by Snedecor and Chochran (1994) [29].

### Results and Discussion

#### Yield and Production Cost of shrikhand prepared from different ratio of buffalo and camel milk

In Table 1 the manufacturing cost of shrikhand calculated on the basis of prevailing market rates of raw milk. The cost production of buffalo and camel milk shrikhand has been shown in table (1). The cost of production of without fruit incorporated shrikhand (T<sub>0</sub>) was Rs. as 224.4/ Kg whereas mango (10%) incorporated buffalo and camel milk shrikhand (T<sub>1</sub>) was Rs. 232.0/Kg, banana (10%) incorporated buffalo and camel milk shrikhand (T<sub>2</sub>) was Rs. as 226.0/Kg and mango + banana (5% + 5%) incorporated buffalo and camel milk shrikhand (T<sub>3</sub>) was Rs. as 229.0/Kg.

**Table 1:** Production Cost of fruits enriched shrikhand developed from buffalo and camel milk

S. No.	Constituents	Cost (Rs/kg)	T <sub>0</sub> (control)		T <sub>1</sub>		T <sub>2</sub>		T <sub>3</sub>	
			Quantity (in gram)	Amount (in Rs.)	Quantity (in gram)	Amount (in Rs.)	Quantity (in gram)	Amount (in Rs.)	Quantity (in gram)	Amount (in Rs.)
1.	Camel Milk (/kg)	60	90	5.4	90	5.4	90	5.4	90	5.4
2.	Buffalo Milk (/kg)	60	210	12.6	210	12.6	210	12.6	210	12.6
3.	Chakka(/kg)	240	60	14.4	59	14.16	59	14.16	59	14.16
4.	Mango(/kg)	100	-	-	10	1	-	-	-	-
5.	Banana(/kg)	40	-	-	-	-	10	0.4	-	-
6.	Mango+ Banana(kg)	100+40	-	-	-	-	-	-	10	0.5+0.2
7.	Sugar(/kg)	60	40	2.4	40	2.4	40	2.4	40	2.4
8.	Processing(/kg)	20	100	2	100	2	100	2	100	2
9.	Packing(/kg)	25	100	2.5	100	2.5	100	2.5	100	2.5
10.	Other (/kg)	10	100	1	100	1	100	1	100	1
11.	Total(/kg)			224.4		232.0		226.0		229.0
12.	Total(/100g)			22.44		23.20		22.60		22.90

T<sub>0</sub>(control) – Buffalo and camel milk shrikhand without any fruits, T<sub>1</sub> - Buffalo and camel milk shrikhand with mango (10%), T<sub>2</sub> - Buffalo and camel milk shrikhand with banana (10%), T<sub>3</sub> - Buffalo and camel milk shrikhand with mango + banana (5 + 5%).

As there is only a slight difference in the cost of fruits enriched shrikhand as compared to the shrikhand without any fruits pulp, but looking towards the antioxidant properties, longer shelf life and good acceptability, the fruits enriched shrikhand may be recommended for consumption to the consumers.

### Sensory evaluation of fruits enriched shrikhand developed from buffalo and camel milk

Sensory evaluation is the science related to the senses. Human senses include touch, smell, vision, hearing and taste. These organoleptic characteristics are judged by different organs of our body. In this evaluation product is judged for different

sensory attributes such as flavour, colour and appearance, body and texture as well as overall acceptability.

All the samples of fruits enriched shrikhand were prepared in four replications of the present study and were evaluated for their sensory attributes on eight point hedonic scale by a panel of judges.

The buffalo milk and camel milk mixing 70:30 ratio for prepared of fruits enriched shrikhand was evaluated for sensory attributes and result obtain have been presented in Table 2 and in Figure 2.

The average values for all the attributes like appearance and colour, flavour, body and texture and overall acceptability for different buffalo and camel milk shrikhand varies from 6.6±0.108 to 7.7±0.082.

The average score for flavour of control buffalo and camel milk shrikhand (T<sub>0</sub>) was found to be 6.6±0.108 and for fruits incorporated buffalo and camel milk shrikhand i.e. for T<sub>1</sub>, T<sub>2</sub> and T<sub>3</sub> it was found to be 7.4±0.14, 7.43±0.12 and 6.6±0.147

respectively. Thus it may be concluded that T<sub>1</sub> and T<sub>2</sub> (mango and banana incorporated buffalo and camel milk shrikhand) scored maximum point 7.4±0.14 and 7.43±0.12 respectively for flavour by the panellist.

The average score for body and texture of control buffalo and camel milk shrikhand (T<sub>0</sub>) was found to be 7.2±0.07, fruits incorporated buffalo and camel milk shrikhand i.e. for T<sub>1</sub>, T<sub>2</sub> and T<sub>3</sub> it was found to be 6.7±0.108, 7.7±0.082 and 7.23±0.063 respectively. Thus it may be concluded that T<sub>2</sub> (banana incorporated buffalo and camel milk shrikhand) scored maximum point 7.7±0.082 for body and texture by the panelist whereas mango incorporated buffalo and camel milk shrikhand (T<sub>1</sub>) obtained minimum point 6.7±0.108 for body and texture.

The average point for appearance and colour of control buffalo and camel milk shrikhand (T<sub>0</sub>) was found to be 6.7±0.108 and fruits incorporated buffalo and camel milk

shrikhand i.e. for T<sub>1</sub>, T<sub>2</sub> and T<sub>3</sub> it was found to be 7.6±0.071, 7.18±0.048 and 7.4±0.082 respectively.

Thus it may be concluded that T<sub>1</sub> (10% mango incorporated buffalo and camel milk shrikhand) scored maximum point 7.6±0.071 for appearance and colour by the panelists. Without fruit incorporated buffalo and camel milk shrikhand (T<sub>0</sub>) obtained minimum point 6.7±0.108 for appearance and colour.

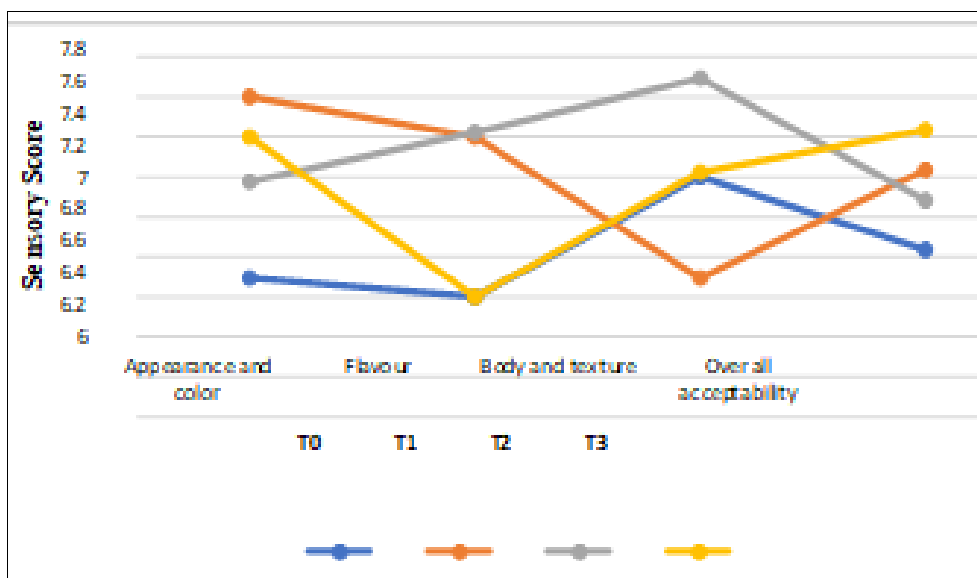
On the basis of data presented in Table (2) the mango + banana incorporated buffalo and camel milk shrikhand (T<sub>3</sub>) had obtained maximum overall acceptability 7.44±0.071 Whereas control and fruits incorporated buffalo and camel milk shrikhand T<sub>0</sub>, T<sub>1</sub> and T<sub>2</sub> it was found to be 6.84±0.024, 7.24±0.082 and 7.08±0.052 respectively.

A highly significant (*p*<0.01) difference was observed for flavour, body and texture, appearance and colour, overall acceptability.

**Table 2:** Sensory quality score of shrikhand prepared from mixing of buffalo and camel milk (70:30)

Parameter	T <sub>0</sub> (control)	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>
Appearance and colour	6.7 <sup>a</sup> ±0.108	7.6 <sup>c</sup> ±0.071	7.18 <sup>b</sup> ±0.048	7.4 <sup>bc</sup> ±0.082
Flavour	6.6 <sup>a</sup> ±0.108	7.4 <sup>b</sup> ±0.147	7.43 <sup>b</sup> ±0.125	6.6 <sup>a</sup> ±0.147
Body and texture	7.2 <sup>b</sup> ±0.071	6.7 <sup>a</sup> ±0.108	7.7 <sup>c</sup> ±0.082	7.23 <sup>b</sup> ±0.063
Overall acceptability	6.84 <sup>a</sup> ±0.024	7.24 <sup>b</sup> ±0.082	7.08 <sup>b</sup> ±0.052	7.44 <sup>c</sup> ±0.071

**Note:** Means bearing different superscript in a row (small letter) differ significantly, T<sub>0</sub>(control)– buffalo and camel milk shrikhand without any fruits, T<sub>1</sub> - Buffalo and camel milk shrikhand with mango (10%), T<sub>2</sub> - Buffalo and camel milk shrikhand with banana (10%), T<sub>3</sub> - Buffalo and camel milk shrikhand with mango + banana (5 + 5%)



**Fig 2:** Sensory quality of fruits enriched shrikhand developed from buffalo and camel milk

The data related to sensory evaluation of mango and banana incorporated buffalo and camel milk shrikhand in present study are in agreement with Sirohi (2005) [28], Swapana (2012) [30], Thakur *et al.* (2014) [31], Dandile (2014) [3], Singh and Paswan (2015) [26], Ghanbahadur (2016) [6], Hole *et al.* (2017) [8], Deshmukh (2017) [4], Gupta (2018) [7], Rai *et al.* (2018) [21], Joshna (2021) [9], Kanwar (2022) [10].

Thus it may be concluded that amongst camel and buffalo milk shrikhand incorporation of 10% (5% mango+ 5% banana) fruit pulp the highest overall acceptability score was obtained as compared to control, 10% mango incorporation shrikhand and 10% banana incorporated shrikhand.

**Conclusion**

In this study, best result obtained on the basis of yield, production cost and consistency of shrikhand by combination

70% buffalo milk and 30% camel milk, best result obtained on the basis of yield and consistency of milk chakka by combination of 70% buffalo milk and 30% camel milk with optimum sensory and nutritional properties as well as good storage stability of fruits enriched shrikhand. As there is only a slight difference in the cost of fruits enriched shrikhand as compared to the control (T<sub>0</sub>), but looking towards the antioxidant properties, longer shelf life and good acceptability, the fruits enriched shrikhand may be recommended for consumption to the consumers. Increasing camel milk into the ratio made the shrikhand consistency inappropriate and decreases the yield whereas decrease camel milk ratio decreases its properties into product. The mango + banana incorporated buffalo and camel milk shrikhand (T<sub>3</sub>) had obtained maximum overall acceptability as compared to

control, 10% mango incorporated shrikhand and 10% banana incorporated shrikhand.

## References

1. Agrawal RP, Swami SC, Beniwal R, Kochar DK, Sahani MS, Tuteja FC. Effect of camel milk on glycemic control, lipid profile and diabetes quality of life in type-1 diabetes: A randomized prospective controlled crossover study. *Indian Journal of Animal Science*. 2003;73:1105e1110.
2. Aneja. Shrikhand preparation by semi-mechanized process. *Indian Journal of Dairy Science*. 2002;38(2):102-106.
3. Dandile UM, Pawar BK, Choudhari DM. Sensory quality of shrikhand prepared by using cardamom and saffron. *Research Journal of Animal Husbandry and Dairy Science*. 2014;5(1):1-5.
4. Deshmukh NM, Sawate AR, Sontakke MD, Desai GB. Preparation and Sensory Evaluation of Probiotic Shrikhand added with Mango and Banana Pulp. *Trends in Biosciences*. 2017;10(4):1165-1168.
5. FSSAI. Food Safety Standards Authority of India. FDA Bhawan near Bal Bhavan, Kotla Road, New Delhi. 2011:29-30.
6. Ghanbahadur NA. Preparation of shrikhand blended with pomegranate juice. M.Sc. (Agri.) thesis submitted to Mahatma Phule Krishi Vidyapeeth, Rahuri, Maharashtra; c2016.
7. Gupta M, Yadav MPS, Chauhan AS. Effect of fruit pulp on chemical qualities of shrikhand. *International Journal of Pure and Applied Biosciences*. 2018;6(2):364-369.
8. Hole DV, Kahate PA, Shelke RR, Ingle ST, Khandare NO. Studies on keeping quality of shrikhand prepared from cow milk blended with unripe banana. *Asian Journal of Dairy and Food Research*. 2017;36(1):26-29.
9. Joshna D, Padmaja A, Aravindakshan P, Pagote CN, Rao KJ. Process Standardization for Fruit Based Chakka Desserts. *International Journal of Fruit Science*. 2021;21(1):712-720.
10. Kanwar P. Quality evaluation of Fruits enriched Paneer Spread developed from Indigenous Cow Milk. M.V.Sc. Thesis presented to Rajasthan University of Veterinary and Animal Sciences, Bikaner; c2022.
11. Karche RV, Thakare VM, Bhagat AV, Shirsath SA. Microbiological quality of cow milk shrikhand and blended with sapota pulp. *International Journal of Food, Agriculture, and Veterinary Science*. 2015;5(1):18-22.
12. Karray N, Lopez C, Ollivon M, Attia HL. La matière grasse du lait de dromadaire: composition, microstructure et polymorphisme. *Une revue Ol. Corps Gras Lipides*. 2005;12:439-446.
13. Keeton JT. Effects of fat and NaCl/phosphate levels on the chemical and sensory properties of pork patties. *Journal of Food Science*. 1983;48(3):878-888.
14. Khaskheli M, Arain MA, Chaudhry S, Soomro AH, Qureshi TA. Physico-chemical quality of camel milk. *Journal of Agricultural Sciences*. 2005;2:164-166.
15. Konuspayeva G, Lemarie E, Faye B, Loiseau G, Montet D. Fatty acid and cholesterol composition of camel's (*Camelus bactrianus*, *Camelus dromedarius* and hybrids) milk in Kazakhstan. *Dairy Science and Technology*. 2008;88:327-340.
16. Magjeed NA. Corrective effect of milk camel on some cancer biomarkers in blood of rats intoxicated with aflatoxin B1. *Journal of the Saudi Chemical Society*. 2005;9:253-263.
17. Mengstu A, Bachheti A, Abate L, Bachheti RK, Husen A. Health-Promoting Benefits, Value-Added Products, and Other Uses of Banana. In: *Non-Timber Forest Products: Food, Healthcare and Industrial Applications*; c2021. p. 339-364.
18. Mirza B, Croley CR, Ahmad M, Pumarol J, Das N, Sethi G, Bishayee A. Mango (*Mangifera indica* L.): A magnificent plant with cancer preventive and anticancer therapeutic potential. *Critical Reviews in Food Science and Nutrition*. 2021;61(13):2125-2151.
19. Narayanan R, Lingam J. Sensory analysis of banana blended shrikhand. *African Journal of Agriculture Research*. 2013;8(44):5518-5521.
20. Pawar R. Studies on preparation of rabri blended with mango pulp. Thesis submitted to Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli; c2003.
21. Rai HK, Rai DC, Saloni. Study the shelf life of Tulsi (*Ocimum tenuiflorum*) enriched herbal shrikhand. *The Pharma Innovation Journal*. 2018;7(5):611-615.
22. Ramet JP. The technology of making cheese from camel milk (*Camelus dromedarius*). *FAO Animal Production and Health*. 2001; 113. ISBN: 92-5-103154-1.
23. Salunke P, Patel HA, Thakar PN. Microbiological quality of Shrikhand sold in Maharashtra state. *Journal Dairying Food and Home Science*. 2005;24(2):150-152.
24. Shabo Y, Barzel R, Margoulis M, Yagil R. Camel milk for food allergies in children. *Immunology and Allergies*. 2005;7:796e798.
25. Sharma VP, Reutur SR. A Review, International conference on traditional Dairy Foods; c1992. p. 14-15.
26. Singh CS, Paswan VK. Process optimization for jamun enriched shrikhand. *International Journal of Current Microbiology and Applied Sciences*. 2015;4(12):73-81.
27. Singh R. Characteristics and technology of traditional Indian cultured dairy products. *Indian Dairyman*. 2006;58(11):49-56.
28. Sirohi D, Patel S, Choudhary PL, Sahu C. Studies on preparation and storage of whey-based mango herbal pudina (*Mentha arvensis*) beverage. *Journal of Food Science and Technology*. 2005;42(2):157-161.
29. Snedecor GW, Cochran WG. *Statistical Methods*. 8th ed. 1994.
30. Swapna G, Suvarna V, Chavan N. Effect of lactic acid bacteria and probiotics added shrikhand: An indigenous milk product. *International Journal of Food and Nutritional Sciences*. 2012;1(1):10-15.
31. Thakur SN, Kant R, Chandra R. Preparation of shrikhand by mango pulp. 2014;25(1):79-82.