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Studies on sensory qualities of shrikhand blended with avocado (*Persia americana*) pulp

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Abstract

The experiment was undertaken to explore the possibilities of utilizing Avocado Pulp in *shrikhand* production to improve sensory quality of product. The obtained product was subject for physico-chemical properties, sensory qualities and cost of production cost. The present study was carried out with for four treatments including control T₁ and *shrikhand* prepared from Buffalo milk *chakka* with different proportion of Avocado Pulp. i.e 5 percent, 10 percent and 15 percent in Treatment T₂, T₃ and T₄ respectively. The mean score of Colour and appearance of *shrikhand* was highest in T₄ (7.75) and lowest in T₁ (8.75). The mean score for flavour was highest in T₂ (8.75) and lowest in T₄ (8.00), average score for taste was highest in T₂ (8.75) and lowest in T₄ (7.50). The mean score for consistency was highest in T₂ (8.50) and lowest in T₄ (7.50). Treatment T₂ (8.75) showed highest overall acceptability score over other Treatments. It is concluded that, acceptable quality *shrikhand* can be prepared by adding T₂ (5 percent) Avocado pulp.

Keywords: Buffalo milk *chakka*, *shrikhand*, avocado pulp, sensory quality

Introduction

India is the world's top milk producer, with 239.30 million tonnes produced annually in 2023-24 compared to 230.58 million tonnes in 2022-23, recording a growth rate of 3.83%. The per capita availability of milk has reached 471 grams per day during the year 2023-24, which is more than the world average of around 329 grams per day in 2023^[1].

Shrikhand is a semi solid, sweetish-sour fermented milk product made from *dahi*, whey is drained from *dahi* to produce *chakka*. Sugar, flavour, color and spices are blended into *chakka* to create a soft homogenous mass that Similar to sweetened quarge of Germany. *Shrikhand* is popular Indian sweet dish that is served as part of meal during festivals^[7].

Avocado is low sugar fruit rich in proteins, fiber and vitamin (A, B, C, E and K). it is great source of Potassium and Phosphorus and monounsaturated fatty acid which lower the level of low density lipoprotein (LDL) in the blood help to prevent coronary heart diseases^[4].

The present experiment on "Preparation of *shrikhand* blended with Avocado (*Persia americana*) pulp" was undertaken to find out sensory quality of developed *shrikhand*.

Materials and Methods

The present experiment was conducted at Department of Animal Husbandry and Dairy Science, College of Agriculture, Latur, Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani. during 2024-25.

The fresh standardized buffalo milk was used to prepare *shrikhand*. Buffalo milk (Natural Milk company) was collected from local market. White crystalline cane sugar was collected from local market. Standard *dahi* culture (NCDC-167) was procured from NDRI, Karnal. Avocado fruit was collected from local market. The method mentioned by Andharepatil (2020) with slight modification was used for preparation of *shrikhand*.

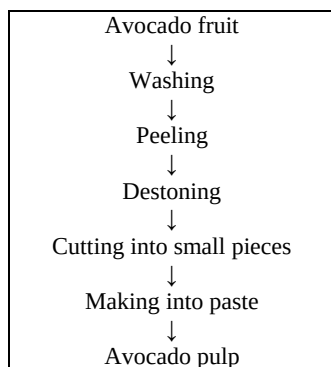


Fig 1: Preparation Avocado pulp Pandey *et.al.* (2020)

Preparation of *shrikhand* blended with avocado pulp

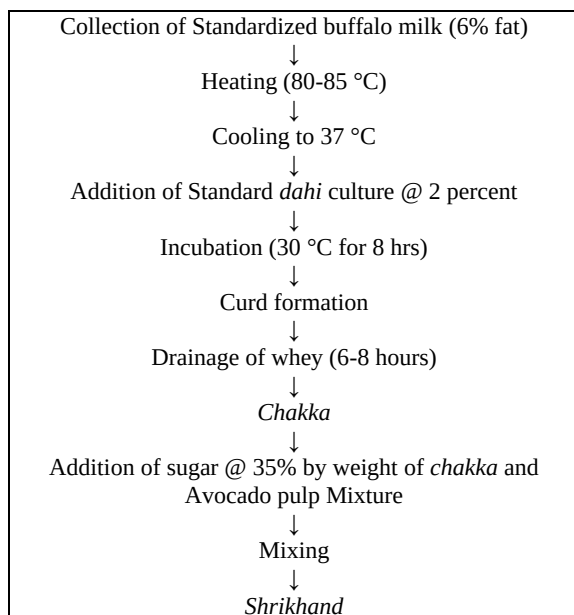


Fig 2: Flow chart of Avocado (*Persea americana*) pulp blended *shrikhand*

Methods

Preparation of *shrikhand* blended with Avocado pulp

Treatment combination

Shrikhand blended with avocado pulp was prepared by using 35% sugar by weight of *chakka* and avocado pulp as per treatment.

T₁-100 Parts of *Chakka* (Control)

T₂-95 Parts of *Chakka* and 5 Parts of Avocado fruit pulp by weight

T₃-90 Parts of *Chakka* and 10 Parts of Avocado fruit pulp by weight

T₄-85 Parts of *Chakka* and 15 Parts of Avocado fruit pulp by weight

Sensory Evaluation: Sensory evaluation of *shrikhand* samples were carried out by a judges of semi-expert panel by using 9-point hedonic scale. Flavour, consistency, Colour and appearance and Overall acceptability sensory parameters were included in the study.

Result and Discussion

The present study and investigation on “Preparation of *shrikhand* blended with avocado (*Persia americana*) pulp” were analysed for the sensory qualities. The Sensory parameters such as colour and appearance, flavour, taste,

consistency and overall acceptability was studied and obtained data were analyzed by using Completely Randomized Block Design (CRD). The Scores given by judges were recorded and discussed as follow.

Colour and appearance

Table 1: Colour and appearance score for avocado pulp blended *shrikhand*

Treatment	Replication				Mean
	R ₁	R ₂	R ₃	R ₄	
T ₁	7.00	9.00	8.00	7.00	7.75
T ₂	8.00	7.00	9.00	8.00	8.00
T ₃	9.00	8.00	8.00	8.00	8.25
T ₄	8.00	9.00	9.00	9.00	8.75
S.E±0.3608 C.D at 5% 1.1118					

The values with different small letter superscripts row wise differ non significantly at 5 percent level of significance.

The results showed that incorporation of Avocado pulp in *shrikhand* increased colour and appearance score non-significantly towards the higher level of addition of Avocado pulp in *shrikhand*. The colour and appearance score for T₄ (8.75) was highest and differ non significantly from T₁ (7.75), T₂ (8.00), T₃ (8.25). Yadhav (2018) [8] who prepared *shrikhand* by using goat milk *shrikhand* blended with sapota pulp and beetal leaf extract and found highest score for colour and appearance T₃ (8.25) than T₀ (7.10), T₁ (7.15) and T₂ (7.40).

Flavour score for *Shrikhand* blended with avocado pulp

Table 2: Flavour score for *Shrikhand* blended with avocado pulp

Treatment	Replication				Mean
	R ₁	R ₂	R ₃	R ₄	
T ₁	9.00	8.00	8.00	7.00	8.00
T ₂	9.00	9.00	8.00	9.00	8.75
T ₃	7.00	9.00	9.00	9.00	8.50
T ₄	8.00	7.00	8.00	8.00	7.75
S.E±0.3679 C.D at 5% 1.1338					

The values with different small letter superscripts row wise differ non significantly at 5 percent level of significance.

Mean flavour score for control sample and *shrikhand* blended with Avocado pulp were T₁ (8.00), T₂ (8.75), T₃ (8.50) and T₄ (7.75) respectively. Highest flavour score was noticed in T₂ (8.75) and lowest in T₄ (7.75) treatment combination. Atmanaji (2019) [3] who prepared yoghurt from cow milk by incorporation of avocado pulp at 2.5, 5 and 7.5 percent and observed highest flavour score for 2.5 percent avocado pulp (5.93) followed by 5 percent Avocado pulp (5.67) and 7.5 percent Avocado pulp (6.63).

Taste score for *Shrikhand* blended with avocado pulp

Table 3: Taste score for *Shrikhand* blended with avocado pulp

Treatment	Replication				Mean
	R ₁	R ₂	R ₃	R ₄	
T ₁	9.00	8.00	8.00	7.00	8.00
T ₂	8.00	9.00	9.00	9.00	8.75
T ₃	9.00	8.00	8.00	8.00	8.25
T ₄	8.00	7.00	7.00	8.00	7.50
S.E±0.3061 C.D at 5% 0.9434					

The values with different small letter superscripts row wise differ non significantly at 5 percent level of significance. Mean taste score for control sample and *shrikhand* blended with Avocado pulp were T₁ (8.00), T₂ (8.75), T₃ (8.25) and T₄ (7.50) respectively. Higher taste score was found in T₂ (8.75) among all other treatment combination. Moolwong (2023) ^[5] who prepare ice-by addition of Avocado pulp at 10, 20 and 30 percent and observed highest taste score for 10 per avocado pulp (7.47) compared to control sample (7.36).

Consistency score for *Shrikhand* blended with avocado pulp

Table 4: Consistency score for *Shrikhand* blended with avocado pulp

Treatment	Replication				Mean
	R ₁	R ₂	R ₃	R ₄	
T ₁	8.00	7.00	8.00	9.00	8.00
T ₂	9.00	8.00	8.00	9.00	8.50
T ₃	8.00	8.00	9.00	8.00	8.25
T ₄	7.00	7.00	8.00	8.00	7.50
S.E±0.3145 C.D at 5% 0.9693					

The values with different small letter superscripts row wise differ non significantly at 5 percent level of significance. average consistency score for control sample and *shrikhand* blended with Avocado pulp were for T₁ (8.00), T₂ (8.50), T₃ (8.25) and T₄ (7.50) respectively. Andharepatil (2020) who prepared *shrikhand* by adding dragon fruit pulp at rate 5, 10 and 15 percent and found that the consistency score was highest at 5 percent dragon fruit pulp (8.55), which was greater than the score of the control sample (8.35).

Overall acceptability score for *Shrikhand* blended with avocado pulp

Table 5: Overall acceptability score for *Shrikhand* blended with avocado pulp

Treatment	Replication				Mean
	R ₁	R ₂	R ₃	R ₄	
T ₁	8.00	7.00	9.00	8.00	8.00
T ₂	9.00	9.00	8.00	9.00	8.75
T ₃	8.00	8.00	9.00	8.00	8.25
T ₄	8.00	7.00	7.00	7.00	7.25
S.E±0.2975 C.D at 5% 0.9168					

The values with different small letter superscripts row wise differ non significantly at 5 percent level of significance. Mean overall acceptability score for control sample and *shrikhand* blended with Avocado pulp were for T₁(8.00), T₂(8.75), T₃(8.25) and T₄ (7.25) respectively. Moolwong (2023) ^[5] who prepared ice-cream by incorporation of avocado pulp at 10,20 and 30 percent and found highest overall acceptability score 10 percent avocado pulp (7.47) followed by 20 percent avocado pulp (7.39) and 30 percent avocado pulp (6.47).

Conclusion

Shrikhand prepared with 5% avocado pulp results good in colour and appearance, flavour, taste, consistency and overall acceptability as compared to control sample. hence it is concluded that *shrikhand* can be prepared by adding 5

percent avocado pulp. The avocado pulp could be successfully utilized for preparation of *shrikhand*.

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