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Physico-chemical analysis of probiotic shrikhand blending with sapota pulp

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Abstract

A study on Preparation of Probiotic Shrikhand Blending with Sapota Pulp was carried out by using buffalo milk. The study was to develop Probiotic Shrikhand Blending with Sapota Pulp in different concentration by using whole milk. And the study on physicochemical parameters of probiotic shrikhand prepared by addition of different levels of sapota pulp. Probiotic shrikhand prepared with 15 per cent papaya pulp was found best treatment.

Keywords: shrikhand, sapota pulp, physicochemical analysis of shrikhand

Introduction

The increasing demand from consumers for dairy products with 'functional' properties is a key factor driving value sales growth in developed markets. This has led to the promotion of added-value products such as probiotic and functional yoghurts, reduced-fat and enriched milk products, fermented dairy drinks, and organic cheese (Narayanan and Lingam, 2013).

Shrikhand is an Indian sweet dish made of strained yoghurt. The Shrikhand is a curd prepared with added sugar, flavouring agent. Shrikhand is an indigenous fermented milk product prepared by the fermentation of milk by using known strain of lactic acid bacteria.

Probiotics are microorganisms that are believed to provide health benefits. The term probiotic is currently used to name ingested microorganisms associated with benefits for humans and animals.

Probiotic components present in the food, or can be incorporated into food. The probiotic microorganisms consist mostly of strains of the genera *Lactobacillus* and *Streptococcus*. The genus *Lactobacillus* has a long history of safe use, especially in the dairy industry a play major role in the production of fermented milk products.

Treatment details

| Treatments | Chakka (gm) | Sapota pulp (gm) |
|----------------|-------------|------------------|
| T ₀ | 200 | 00 |
| T ₁ | 190 | 10 |
| T ₂ | 180 | 20 |
| T ₃ | 170 | 30 |
| T ₄ | 160 | 40 |

Starter culture, its maintenance and propagation

The freeze dried pure cultures of *Streptococcus thermophilus* and *Lactobacillus bulgaricus* was obtained from the ICAR-National Dairy Research Institute, Karnal (Hariyana). The cultures were maintained separately in sterilized reconstituted skim milk test tubes.

The sterilized skim milk test tube were separately inoculated with these cultures and incubated at 37°C for 8 hr and thereafter stored at refrigerator temperature. In order to keep these cultures active, they were propagated once in week (Shankar, 1975).

Preparation of probiotic Shrikhand with adding sapota pulp

The probiotic Shrikhand was prepared by using the procedure prescribed by G. Swapna and Suvarna V. Chavannavar, 2012 with some modifications. The flow diagram for preparation of probiotic Shrikhand with adding sapota pulp is depicted in Fig

**Flow diagram of preparation of probiotic
Shrikhand with adding sapota pulp**

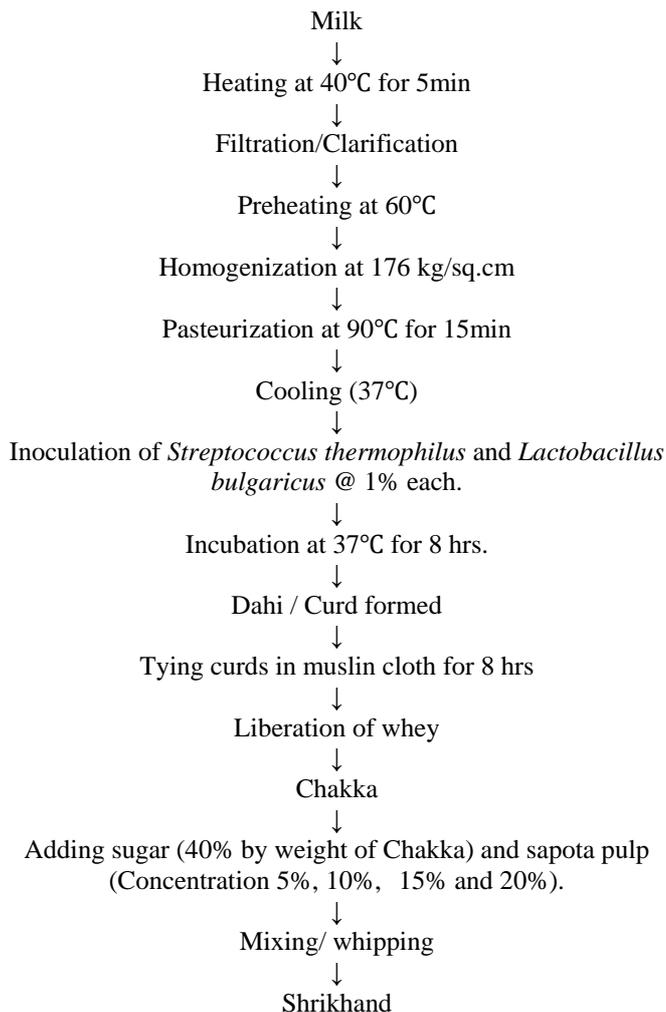


Table 1: Physicochemical analysis of probiotic shrikhand

| Sample | Total solid | Fat | Protein | Ash | Acidity |
|----------------|-------------|-------|---------|-------|---------|
| T ₀ | 61.38 | 7.14 | 7.35 | 0.52 | 1.25 |
| T ₁ | 59.01 | 6.90 | 7.18 | 0.51 | 1.24 |
| T ₂ | 58.77 | 6.45 | 6.93 | 0.47 | 1.23 |
| T ₃ | 56.92 | 6.27 | 6.73 | 0.47 | 1.23 |
| T ₄ | 55.22 | 6.08 | 6.50 | 0.45 | 1.21 |
| S.E | 15.0 | 1.77 | 1.73 | 0.12 | 1.59 |
| C.D | 873.8 | 11.62 | 11.9 | 0.059 | 1.95 |

Conclusion

Total solids content of shrikhand decreased with an increase in the level of sapota pulp. The maximum total solids content (61.38%) was noticed in shrikhand without sapota pulp i.e. T₀, where as the lowest (55.22%) was recorded in shrikhand with 20 per cent sapota pulp i.e. T₄.

The mean value of fat decreased significantly from T₀ to T₄. The highest fat content (7.14%) was observed in shrikhand prepared without sapota pulp i.e. (T₀), whereas the lowest fat content (6.08 %) in shrikhand with 20 per cent juice T₄.

There was significant decreased in protein content of shrikhand with increase in the level of sapota pulp. The highest protein content (7.35%) was observed in shrikhand prepared without sapota pulp (T₀), whereas the lowest protein (6.50%) in shrikhand with 20 per cent sapota pulps (T₄).

The variation in ash content of shrikhand was non-significant. The highest ash content (0.52%) was observed in shrikhand

prepared without sapota pulp (T₀), whereas the lowest percentage (0.45%) in shrikhand with 20 per cent sapota pulps (T₄).

The mean value of acidity negligibly decreased with increase in the level of sapota pulp. The highest acidity (1.25%) was observed in shrikhand prepared without sapota pulp (T₀), whereas the lowest acidity (1.21 %) in case of shrikhand with 20 per cent sapota pulp (T₄).

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