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# Study the Quality Parameters of Sandesh Prepared from the Milk with Different Level of Fat Percentage

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## ABSTRACT

A study was conducted on preparation of sandesh, containing different fat ratios of milk. Three ratios 3%, 3.5%,and 4% &4.5% containing same level of solid not fat (SNF% ) taken and coded as $T_1$, $T_2$, $T_3$,& $T_4$ respectively freshly made chhana and mixed with cane-sugar sweeteners heated on a slow fire only for 10 mins. Poured it into a tray and left it to cool and set. Thus experimental sandesh was ready. Experimental sandesh ($T_4$) having 20% levels of high nutrients were most acceptable, followed by $T_3$, $T_2$, $T_1$. The product was analyzed for organoleptic attributes like flavor &taste, body & texture, colour & appearance and overall acceptability by trained panelist using 9 point hedonic scale. Physic-chemical (moisture, fat, protein, carbohydrate, ash) and analysis were done for estimating its nutritional content. Based on the statistical analysis of experimental data from various parameters using different levels were found to be superior to experimental sandesh ($T_4$). As far as organoleptic attributes are concerned among the treatment the highest score was reported for $T_4$ followed by $T_3$, $T_2$&$T_1$. Thus as per the acceptability of the product judged by organoleptic evaluation, the treatment can be rated as $T_4$> $T_3$> $T_2$>$T_1$.

**Key words:** Milk product, Sandesh, Chhana and fat percentages.

## INTRODUCTION

**Sandesh** is a very popular heat-desiccated product of coagulated milk protein mass called chhana (a heat- and acid-coagulated product of milk that is analogous to cottage cheese) of



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West Bengal, India. **Sen and Rajorhia (1990).** Milk **chhana** is usually preferred for sandesh preparation as it produces soft body and smooth texture. In contrast, milk chhana produces undesirable hard body and coarse texture, probably due to the high protein (casein) and calcium content. At present rassogolla and sandesh are prepared and marketed in small scale by the sweet makers. Calcutta is famous for rassogolla and sandesh products **(Sen and Rajorhia 1989)**. Sandesh is known for its taste, palatability, and aroma and as a rich source of milk proteins, fat, sucrose, and fat-soluble vitamins. Sandesh is a popular sweet all over India, particularly in the eastern part of India. It has the tremendous market potential and a household name in Bengal.

## MATERIAL AND METHODS

The present investigation was laid out in the CRD with 4 treatments and 5 replications in the laboratory in Department of Dairy technology, Sam Higginbottom Institute of Agriculture, Technology and Sciences, Allahabad during the year 2011-2012.

Total no. of treatments were eight *viz.* $\mathbf{T_1}$ Sandesh prepared from chhana obtained from milk having 3%fat & 8.5 %SNF ,$\mathbf{T_2}$ Sandesh prepared from chhana obtained from milk having 3.5%fat &8.5 %SNF ,$\mathbf{T_3}$ Sandesh prepared from chhana obtained from milk having 4%fat &8.5 %SNF ,$\mathbf{T_4}$ Sandesh prepared from chhana obtained from milk having 4.5%fat & 8.5 %SNF.

Material used for Sandesh preparation:

1.Milk , 2.Cream , 3.Cane sugar , 4.Citric acid

**Flow diagram adopted for manufacturing experimental sandesh:**

**Plan of work**

Milk
↓
Standardization
↓





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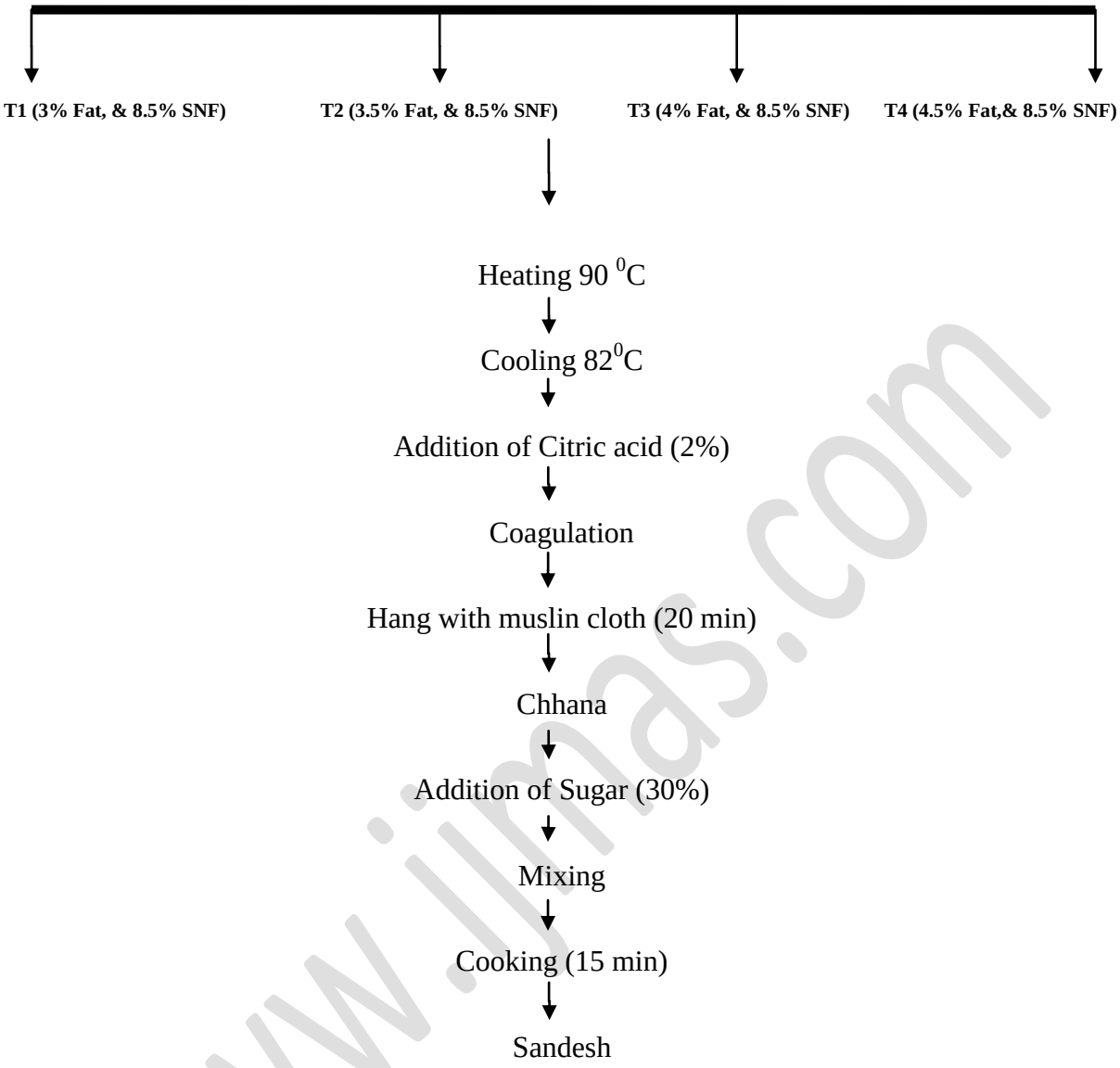


**Result and Discussion**

There was significant difference in moisture content of different treatment combinations. Maximum moisture 36.02 of was recorded in $T_4$ followed by $T_3$ (35.68), $T_2$ (35.16) and $T_1$ (34.16).

There was significant difference in fat content of different combinations. Maximum fat of 21.44was found in the $T_4$ followed by $T_3$ (20.16), $T_2$ (18.44) and $T_1$ (17.49).





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There was significant difference in protein content of different combinations. Maximum protein of 18.08 was found in the $T_4$ followed by $T_3$ (17.36), $T_2$ (17.3) and $T_1$ (16.86).

There was significant difference in ash content of different combinations. Maximum ash of 2.164 recorded in the $T_4$ followed by $T_3$ (2.124), $T_2$ (2.062) and $T_1$ (2.082).

There was significant difference in carbohydrate content of different combinations. Maximum carbohydrate of 29.33was found in the $T_1$ followed by $T_2$ (27.04), $T_3$ (24.67) and $T_4$ (22.26).

The highest mean score for colour and Appearance recorded in the experimental sandesh sample of $T_4$ (7.84), $T_3$ (7.80), $T_2$ (7.84), and $T_1$ (7.60). There was non-significant difference experimental sandesh.

The highest mean score for Flavour and taste recorded in the experimental sandesh sample of $T_1$ (7.92), $T_2$ (7.44), $T_3$ (7.76), and $T_4$ (7.52). There was significant difference experimental sandesh.

The highest mean score for Body and texture recorded in the experimental sandesh sample of $T_4$ (7.76), $T_3$ (7.80), $T_2$ (7.76), and $T_1$ (7.68). There was non-significant difference experimental sandesh.

The highest mean score for overall acceptability recorded in the experimental sandesh sample of $T_1$ (7.76), $T_2$ (7.59), $T_3$ (7.77), and $T_4$ (7.59). There was non-significant experimental sandesh.

The data regarding yield (in kg) of experimental sandesh, from the perusal of data of yield (kg) in experimental sandesh samples of different treatments furnished in table 4.5, it was noted the highest mean yield (kg) was recorded in the experimental sandesh sample of $T_4$ (188) followed by $T_3$ (177), $T_2$ (165), and $T_1$ (150).

## CONCLUSION

The results obtained from the present investigation revealed that the used milk with different levels of fat percentage be satisfactory used to prepare sandesh. Though the significant difference was found in experimental $T_4$ was found to be satisfactory quality. Experimental $T_4$ showed highest fat, protein, ash yield percentage compared to treatments $T_3$, $T_2$ and $T_1$ respectively which gives relatively cheaper and nutritious product for people.

## REFERENCES

i. **Sen , D.C. and Rajorhia, G.S., (1989).** Quality Characteristics of Sandesh Marketed in Calcutta. Indian J. Dairy Sci. **42**, (2), 241-245.

ii. **Sen, D.C. and Rajorhia, G.S., (1990)**. Production of Soft Grade Sandesh from Cow milk. Indian J. Dairy Sci. **43**, (3), 419 – 427.

"**Preparation of Sandesh from milk with different levels of fat percentage"**.

The data collected on different aspects were tabulated & analyzed statistically

| Parameters | Treatments | | | | C.D. value |
|---|---|---|---|---|---|
| | $T_1$ | $T_2$ | $T_3$ | $T_4$ | |
| **1. Chemical Analysis** | | | | | |
| **Moisture** | 34.16 | 35.16 | 35.68 | 36.02 | 0.578 |
| **Fat** | 17.49 | 18.44 | 20.16 | 21.44 | 0.299 |
| **Protein** | 16.86 | 17.3 | 17.36 | 18.08 | 0.164 |
| **Ash** | 2.082 | 2.062 | 2.124 | 2.164 | |



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| | | | | | |
|---|---|---|---|---|---|
| | | | | | 0.100 |
| **Carbohydrate** | 29.33 | 27.04 | 24.67 | 22.26 | 0.370 |
| **Yield** | 150.00 | 165.00 | 177.00 | 188.00 | - |
| **2. Organoleptic Analysis** | | | | | |
| **Colour and Appearance** | 7.6 | 7.84 | 7.8 | 7.84 | 0.328 |
| **Flavour and Taste** | 7.92 | 7.44 | 7.76 | 7.52 | 0.337 |
| **Body Texture** | 7.68 | 7.76 | 7.8 | 7.76 | 0.462 |
| **Overall Acceptability** | 7.76 | 7.59 | 7.77 | 7.59 | 0.299 |

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