Studies on Effect of Fat Levels on Sensory Quality of Peda

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ABSTRACT
Dietary fat is a topic of intense discussion, mostly from the point of view of energy reduction. In a recent study, fat content was the most important motivator in the choice of calorie-reduced dairy products. In the present investigation an attempt has been made to study the sensory evaluation of peda at different treatment combinations. Results related, sensory attributes of peda control (T1) and peda with different level of milk fat viz. 4.5, 3, and 1.5 per cent (T2, T3, and T4) are as, from the results it was observed that, use of different level of milk fat viz. 6, 4.5, 3, and 1.5 per cent. Control peda rated highest score for colour and appearance (8.63), body and texture (8.75), sweetness (8.75), flavour (8.63) and overall acceptability (8.75) than peda prepared from different milk fat. The score was significantly higher than the peda with different level of milk fat that is 4.5, 3, and 1.5 per cent. However, control peda and peda with 4.5% level of milk fat was rated good and acceptable.

Keywords: Sensory Quality, peda, Dietary fat

INTRODUCTION
Today people are very conscious related to daily diet specially dairy product hence, it is demand of people to have low calories dairy food. Now a day's consumer prefers such product which do not have bad affect on health. India rank first in the world with record production of 146.31 million tons of milk per annum with per capita availability 302 gm/day (2015-16). Out of the total milk produced in India, 46 % is consumed as liquid milk, 4 per cent converted into western milk products such as milk powders, processed butter and processed cheese and remaining 50 per cent is converted into traditional dairy products such as Ghee/ Makhan (clarified butter), Dahi (Yoghurt-like), Khoa (Partially desiccated milk product) and Chhana and Paneer (unprocessed cottage cheese). Out of these 7 per cent of milk is used for the manufacture of khoa based sweets as peda, burfi, kalakand, milkcake etc. (Handbook on Technology of Indian Milk Products). Buffalo milk is preferred over cow and goat for preparation of milk products such as paneer, basundi, khoa and khoa based sweets (Peda, burfi, kalakand, gulabjamun etc.) because it gives soft and uniform body with smooth, compact and homogenous texture to finished products. Khoa occupies a prominent place in traditional dairy products sector. Khoa is the product obtained from cow, buffalo, goat or sheep milk/milk solids or a combination thereof by rapid drying of milk having fat content should not be less than 20 per cent of the finished product [8]. Varieties of khoa are produced in the market such as pindi, dhap and danedar and used for preparation of peda, burfi, gulabjamun and kalakand respectively [4].

MATERIALS AND METHODS
Buffalo milk required for the study was procured from the Dairy of Natural Milk Pvt, Ltd, Latur and standardized as per treatment.

Treatment details
- Ti - Buffalo milk of 6 per cent fat + 30 per cent sugar.
- T2 - milk of 4.5 per cent fat + 30 per cent sugar.
- T3 - milk of 3 per cent fat + 30 per cent sugar.
- T4 - milk of 1.5 per cent fat + 30 per cent sugar.
The different levels were tried and compared with control (T1).
Milk was standardized by using Pearson's square method.

**Flow diagram for preparation of peda**

The Peda was prepared with standardized method separately for each treatment as shown in following flow chart

**Sensory evaluation**

Sensory evaluation of pedha was carried out by a panel of judges comprising "9 point Hedonic scale".

**Analysis**

The samples of finished product from various treatment combinations were chemically analyzed for moisture [7], fat [6], Protein by Micro Kjeldahl’s method (1940), the protein content was obtained by multiplying per cent nitrogen of sample by factor of 6.38, and ash [3], total solid [5], Total sugars by the volumetric (lane-Eynon) method as a described in ISI [6].

**RESULT AND DISCUSSION**

**Sensory Properties**

The difference in colour and appearance score for treatments T2, T3 and T4 found non significant different. And for **Body and texture** found significant different. **Mean score of sweetness for** treatments T1, T2, and T4 found non significant different. Whereas, the treatments T1, T2, T3 and T4 found non significant different.

**Flavour** score decreased from treatment T1 to T4. Mean overall acceptability score decreased from treatment T1 to T4. Mean overall acceptability score was observed 8.75, 8.13, 7.73 and 7.25, respectively. The treatments T1, T2, T3 and T4, found significant different. This might be due to the level of fat in milk used for preparation of peda. The results indicated that the overall acceptability score had decreasing trend with decrease in fat per cent of milk used. Mean overall acceptability score given in table. The similar findings were observed by Varma et al., [11] who found that, as the fat level in milk increase the body and texture score of milk cake prepared from cow milk increases significantly. Sivakumar et al., [10], during preparation of low fat sweetened *dahi* by addition of soya protein Isolate and carrot juice. Amir Hosein et al., [1], observed that, as the fat content of yogurt decreased by using sesame oil as fat replacer, the sensory score for colour and appearance was decreased. Anil Kumar et al., [2], prepared milk cake by using different fat milk viz.4%, 5% and 6% and reported that, as the level of fat in milk increases it also significantly increases body and texture score for milk cake.

**Table 1. Overall acceptability score of peda prepared using different fat level**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Colour&amp; Appearance</th>
<th>Body and Texture</th>
<th>Flavour</th>
<th>Sweetness</th>
<th>Overall Acceptability</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>8.50</td>
<td>9.00</td>
<td>9.00</td>
<td>8.50</td>
<td>8.75*</td>
</tr>
<tr>
<td>T2</td>
<td>8.00</td>
<td>8.25</td>
<td>8.25</td>
<td>8.00</td>
<td>8.13b</td>
</tr>
<tr>
<td>T3</td>
<td>7.90</td>
<td>7.50</td>
<td>8.00</td>
<td>7.50</td>
<td>7.73c</td>
</tr>
<tr>
<td>T4</td>
<td>7.50</td>
<td>7.50</td>
<td>7.00</td>
<td>7.00</td>
<td>7.25d</td>
</tr>
</tbody>
</table>

**Flow diagram for preparation of peda**

- Buffalo milk
- Pre-heating (38-40°C)
- Filtration
- Standardized (as per treatment)
- Boiling of milk in karahi (stirring-cum-scrapping)
- *Khoa* leaving sides of pan
- Pat formation stage (stop heating)
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Addition of sugar (30% by wt. of khoa)

Stirring and scrapping for mixing

Spreading the mass to the sides of pan

Making of Peda

Storage

REFERENCES


CITATION OF THE ARTICLE