International Journal of Food Science and Nutrition
ISSN: 2455-4898; Impact Factor: RJIF 5.14
Received: 25-11-2018; Accepted: 27-12-2018
www.foodsciencejournal.com
Volume 4; Issue 1; January 2019; Page No. 66-68

Sensory analysis of Gulabjamun prepared by Khoa and Paneer

Anoop Singh[1], Kaushal Kishor[2], Sandeep GM Prasad[3], Smita Majumder[4]
[1] Research Scholar, Warner College of Dairy Technology, Sam Higginbottom University of Agriculture, Technology and Sciences, Allahabad, Uttar Pradesh, India
[2] Assistant professor, G.S. degree college Allahabad State University, Uttar Pradesh, India
[3] Associate Professor, Warner College of Dairy Technology, Sam Higginbottom University of Agriculture, Technology and Sciences, Allahabad, Uttar Pradesh, India

Abstract
Increasing demand for traditional dairy product Gulabjamun is a popular khoa based sweet in India among all the traditional delicacies. Though it is made from khoa. The present study was undertaken with the objectives for sensory analysis of gulabjamun by using khoa and paneer optimized level of softness and uniform granular texture in Gulabjamun, to evaluate the organoleptic quality of Gulabjamun. Three different treatments and control were used in the ratio (100:0, 90:10, 85:15 and 80:20) for Gulabjamun making, indicate as T_0, T_1, T_2, and T_3 respectively. Four treatment combinations were used in the study and replicated five times. The product was analyzed for organoleptic attributes like (Flavour and taste, Body and texture, colour and appearance) by trained panelist using 9- point hedonic scale.

Keywords: gulabjamun, paneer, khoa, appearance, flavor, overall acceptability

1. Introduction
Among the milk-based sweets, gulabjamun occupies a prominent place as a popular delicacy throughout Indian subcontinent. It may be round or cylindrical in shape, is golden to dark brown in color, has a soft to firm body, and smooth texture. Traditionally, gulab jamun is prepared from a mixture of khoa (a heat-desiccated intermediary milk product), refined wheat flour (maida) and baking powder. Khoa is a base for preparation of many Indian indigenous sweets. It refers to partially dehydrated whole milk product prepared by the continuous heating of milk in a frying pan, while also constantly stirring-cum-scraping by using steel or wooden spoon till it reaches a semi-solid consistency. The semi-solid mass is transformed to solid consistency known as khoa, having typically a fat, moisture, and total solid content of 20–23%, 37–44%, and 56–63% respectively, and is used as an ingredient for the preparation of gulab jamun. The mixture is kneaded to get uniform consistency of dough by addition of appropriate quantity of water, and then rolled into small round or cylindrical shape. Finally the round or cylindrically shaped balls were deep-fried in ghee until golden brown followed by dipping into a sugar solution of 62.5°Brix for few hours before serving either hot or cold.
Gulabjamun is a popular khoa based sweet. Originally it was made with khoa and maida. As it looks like monsoon fruit ―Jamun‖ and is flavoured with ―rose water‖. It got the name of Gulabjamun.
Gulabjamun refers to the indigenous dairy product. Almost all the states of the country use gulabjamun as one of the essential and most commonly consumed sweet. Different states using different shapes and size of Gulabjamun viz; cylindrical, oval and spherical, but most commonly found shape is spherical.
Milk is considered to be an adequate source of valuable macronutrients (fat, protein, lactose), vitamins and micronutrients (minerals), making it a ‘wholesome food. Since time immemorial traditional Indian milk products have been an inseparable part of the socio-cultural life of India. The appeal enjoyed by the indigenous sweets is underline by the fact that about 50 percent of India’s milk production is utilized for making these products. Nearly 115 million metric tons/years of milk produced in India .Various traditional milk product like rasogolla, Gulabjamun, sandesh and mistidahi are made in our country since ancient times because of their social, economic, religious, medicinal and cultural significance.
Gulabjamun is a popular sweet prepared in all parts of India. Like other sweets, the manufacture of gulabjamun is also largely in the hands of halwa is who adopt small scale batch method. Though there is large variations in the sensory quality of gulabjamun, the most liked product should have brown colour, smooth and spherical shape, soft and slightly spongy body free from both lumps and hard central core, uniform granular texture, mildly cooked and oily flavor, free from doughy feel and fully succulent with sugar syrup. It shall have optimum sweetness. It may or may not contain a piece of cashew nut in the center (Chetana *et al.,* 2004).
Gulab jamun · Indian traditional sweet · Sugar · Sorbitol · Alternative sweetener Response surface methodology mogeneous mass to obtain a smooth dough along with small amounts of water. The balls of dough are deep-fat fried in ghee (heated butter oil) or refined vegetable oil to a golden brown colour and subsequently transferred to sugar syrup. The sweet is round or oval in shape and dark brown in colour, and served with or without sugar syrup. The traditional method of Gulab jamun preparation has several limitations

such as non-availability of khoa all year round, variation in its quality, and resultant Gulab jamun with poor shelf life. Consequently, many Gulab jamun instant mixes have been developed both from roller- and spray-dried skim milk. Gulab jamun of uniform and acceptable quality can be prepared by both housewives and confectioners from these mixes. Gulabjamun in India is characterized by an unorganized nature of business. There is no denying the fact that indigenous products have come to stay as a vital fiber in the fabric of the country's dairy industry. Obviously, the indigenous products have a big potential of becoming the main stay of the emerging dairy industry under the organized sector and technological developments in their production will have far-reaching implication on it.

2. Material and Methods

The experiment was carried out in the Food Technology Lab of Warner college of Dairy Technology, Sam Higginbottom university of Agriculture, Technology and Sciences Allahabad, 211007, U.P. India. Details of experimental techniques to be employed during the course of investigation will be studied under the following heading:

2.1 Material

Commercial khoa, paneer, maida and refined oil and sugar were used in this work.

The sensory analysis of Gulabjamun was carried out at 25 ^{O}C temperatures by a semi-trained panel of 10 judges drawn from staff and students of the Department of Warner college of Dairy Technology at Sam Higginbottom university of Agriculture, Technology and Sciences Allahabad. The judges were asked to score for the sensory attributes viz. color and appearance, flavor, body and texture, sweetness and overall acceptability, on a 9-point Hedonic scale.

3. Result and Discussion

The data collected on different aspects, as per plan were tabulated and analyzed statistically on the basis of C.R.D. factorial. The findings are also illustrated diagrammatically. The results obtained from the analysis during the course of investigation are presented in this chapter and discussed in detail.

Table 1

Organoleptic score(9 points hedonic scale)				
Colour & appearance	8.05	8.05	8.25	7.90
Favoure & taste	8.10	7.75	8.00	7.90
Body & texture	8.00	7.70	8.00	7.65
Overall acceptability	8.05	7.83	8.07	7.85

3.1 Colour and appearance

Colour and appearance score (9 point hedonic scale) in samples of control and experimental Gulabjamun Data Obtain from the analysis color and appearance (9 point hedonic scale) in Gulabjamun samples of different treatments it has been observed that the mean color and appearance (9 point hedonic scale) was recorded in the Gulabjamun sample of T_0 (8.05), T_1 (8.05), T_2 (8.25) and T_3 (7.90) respectively.

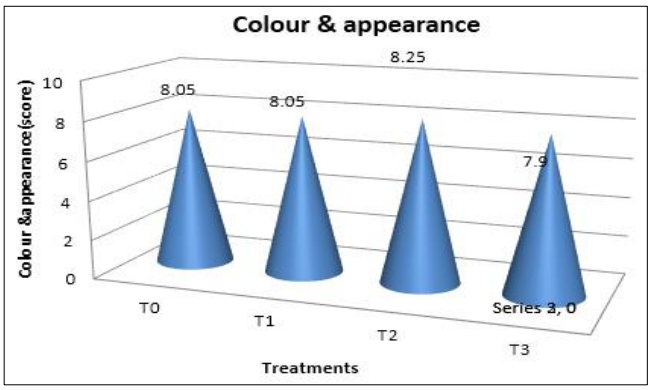

Fig 1

3.2 Flavour and taste

Flavour and taste score (9 point hedonic scale) in samples of control and experimental Gulabjamun Data Obtain from the analysis of flavour and taste (9 point hedonic scale) in Gulabjamun samples of different treatments it has been observed that the mean flavour and taste (9 point hedonic scale) flavour and taste (9 point hedonic scale) was recorded in the Gulabjamun sample of T_0 (8.10), T_1 (7.75), T_2 (8.00) and T_3 (7.90) respectively.

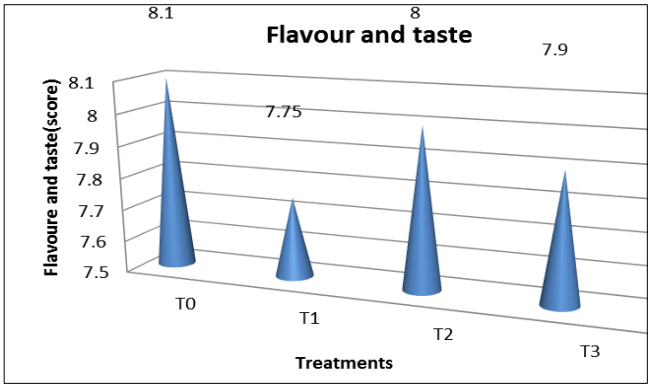

Fig 2

3.3 Body and Texture

Data Obtain from the analysis of body and texture score (9 point hedonic scale) in Gulabjamun samples of difference treatments it has been observed that the mean body and texture (9 point hedonic scale) was recorded in the Gulabjamun sample of T_0 (8.00), T_1 (7.70), T_2 (8.00) and T_3 (7.65) respectively.

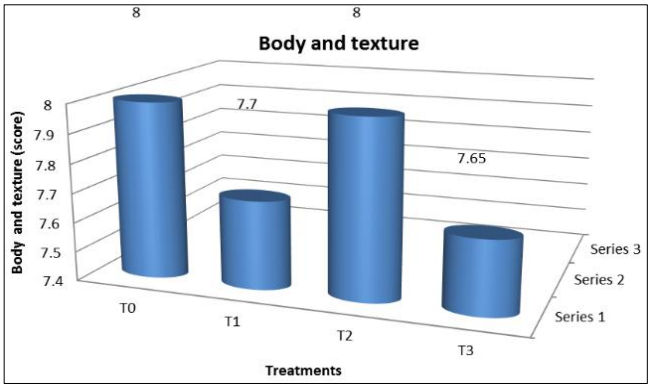

Fig 3

3.4 Overall acceptability

Data Obtain from the analysis of overall acceptability score (9 point hedonic scale) in Gulabjamun samples of difference treatments it has been observed that the mean overall acceptability (9 point hedonic scale) was recorded in the Gulabjamun sample of T_0 (8.05), T_1 (7.83), T_2 (8.07) and T_3 (7.85) respectively.

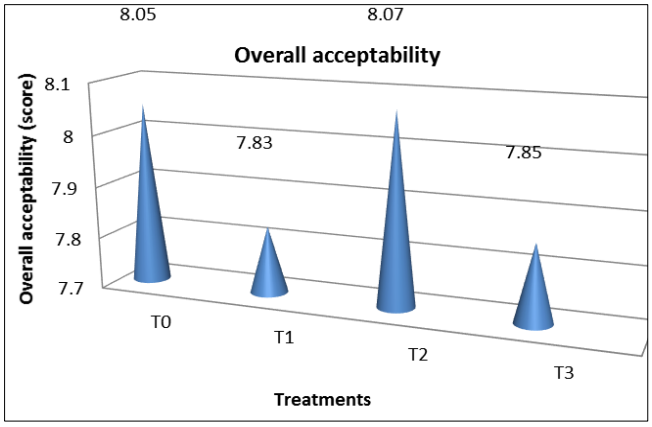

Fig 4

4. Conclusion

Thus, it can be concluded that Khoa and Paneer could be successfully incorporated in Gulabjamun overall acceptability was higher of T_2 as compared to other treatment without adversely affecting the sensory as well as the nutritional quality of finished product.

5. References

1. Anonymous. Handbook of food analysis dairy products. Part (XI) Indian Standards Institution (Manak Bhavan, New Delhi, 1981.
2. Balgore MV. Studies on use of dry heat for preparation of *gulabjamun*. *M. Sc. (Agriculture) Thesis*, Submitted to Vasantrao Naik Marathwada Vidyapeeth, Parbhani, Maharashtra, 1993.
3. Bhingardive, Kanchan B, Joshi SV, Ramod SS. Effect of blending date on sensory quality of gulabjamun. Bioinfolet. 2012; **9**(3):374-375.
4. Dewani PP, Jayprakash HM. Effect of preconcentration of milk quality of Khoa and Gulabjamun. India J. Dairy & Biosci. 2002; 13(2):53-59.
5. Gupta SA. Sensory evaluation in food industry.Indian Dairyman. 1976; 28(8):293-295.
6. Yewale PA, Rao JK. Development of khoa powder based gulabjamun mix. Indian Journal of Dairy Science. 2012; 65(5):361-367.
7. Singh AK, Kadam DM, Saxena M, Singh RP. Efficacy of defatted soy flour supplement in gulabjamun. African Journal of Biochemistry Research. 2009; 3(4):130-135.