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PREPARATION AND SENSORY EVALUATION OF BAEL FRUIT POWDER MILK SHAKE

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ABSTRACT

The present investigation was undertaken with the object of studying the standard procedure of preparation of milk shake from buffalo milk blended with bael fruit powder and studied for its acceptability. Milk shake was prepared from different proportions of buffalo milk and bael fruit powder i.e. 100:00(M0), 98:02 (M1), 95:05 (M2), 90:10 (M3), 85:15 (M4), 80:20 and (M5). The sensory score for overall acceptability of bael fruit powder milk shake of treatments M0, M1, M2, M3, M4 and M5 were 9.0, 8.6, 8.9, 8.0, 7.0, and 6.0 respectively. It was observed that the bael fruit powder milk shake prepared from 95parts of buffalo milk and 05 percent bael fruit powder was most acceptable and ranked between like very much to like extremely. The addition of higher proportion of powder in the blend scored towards lower side by a panel of judges.

KEYWORDS: *Buffalo milk, Milk shake, Bael fruit powder, Sensory evaluation.*

INTRODUCTION :

There are a number of commercially flavored milks such as chocolate, vanilla, banana, orange and strawberry. Chocolate milk is the most popular flavored milk, especially with children. It has high protein content and is a good source of vitamins, calcium and other nutrients. Strawberry flavored milk also demonstrates high acceptability with the consumer (Miller, Jarvis, & Mc Bean, 2007).

Though from time immemorial, the life of an individual begins with milk and this association continues for al whole life, recent advancement in science has resulted in exploitation of several virtue of milk and its product. Today, milk constituents individually and collectively find several applications in cosmetics, pharmaceuticals and value added food industries. The organized dairy industry handles less than 15 per cent of total milk production; rest of milk is sold as fresh, non-pasteurized milk through unorganized channel (Tripathy, 2006). Ram and Singh, (2003) reported that the physico-chemical studies of bael (Aegle marmelos) NB-5, NB-9, NS-1 and Kagzi. NB-9 gave the highest average weight (2.09 Kg) and contents of ascorbic acid (17.25 mg/100gm), reducing sugar content (4.87per cent), NB-5 gave highest pulp (68.13per cent) and highest seed (3.47per cent), and fiber (9.91per cent) contents, shell percentage (29.50per cent) and contends of moisture (66.67per cent) and phenolics (2.87per cent). Out of the four cultivars NB-9 showed good attributes such as large fruit size, higher amount of pulp, vitamin C, carotene, sugars and total soluble solids and lower amount of phenol, seed, fiber, moisture, shell and acidity which may be useful for the processing of bael fruit into various products.

MATERIALS AND METHODS

Buffalo milk required for the study was obtained from Dairy farm,

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Agriculture College, Kolhapur. Milk was standardized to four per cent fat using Pearson's square formula. Bael fruit powder was prepared in Department of Food Science and Technology, Shivaji University, Kolhapur (M.S.), India. Preparation of bael fruit powder by using standard procedure of Dabhade and Khedkar (1980). For preparation of bael fruit powder milk shake, following blends of bael fruit powder and buffalo milk was prepared.

M0 100 % buffalo milk by weight (Control)
M1 02 % bael fruit powder + 98 % buffalo milk by weights
M2 05 % bael fruit powder + 95 % buffalo milk by weight
M3 10 % bael fruit powder + 90 % buffalo milk by weight
M4 15 % bael fruit powder + 85 % buffalo milk by weight
M5 20 % bael fruit powder + 80 % buffalo milk by weight

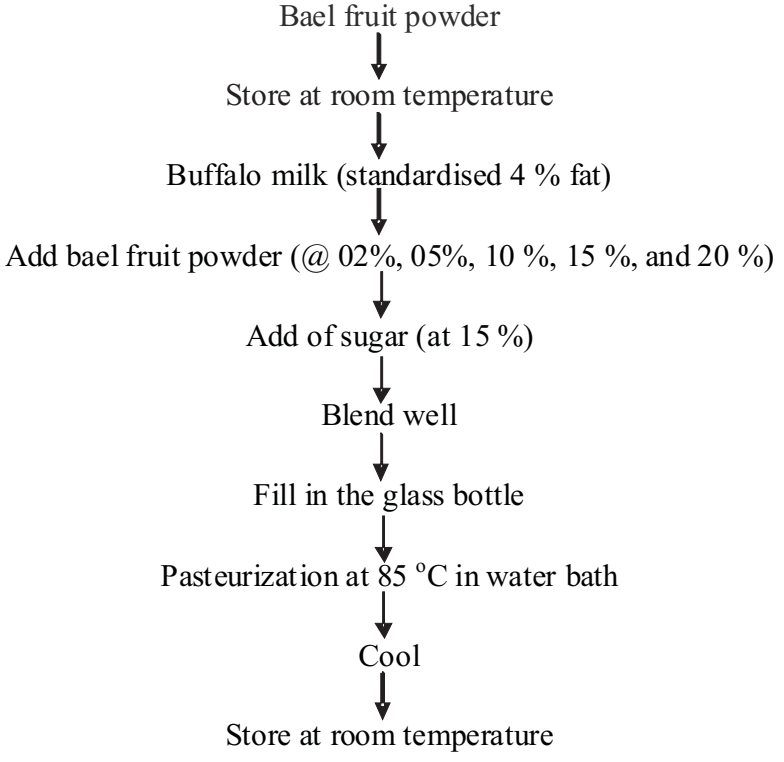
Preparation of bael fruit powder milk shake

Bael fruit powder milk shake was prepared by using the procedure as described by Sharma and Gupta (1978) with slight modification. The buffalo milk was standardized to 4 per cent fat. Stabilizer (sodium alginate) was added @ 0.4 per cent. The flow chart of preparation of bael fruit powder milk shake is depicted (Fig.1).

The bael fruit powder milk shake was subjected to sensory evaluation by a panel of five semi-trained judges from Dept. of Food Science and Technology, Shivaji University, Kolhapur using 9 point Hedonic scale as described by Gupta (1999).

It was judged for colour and appearance, flavor consistency, mouthfeel and overall acceptability. The results obtained during the course of investigation were subjected to statistical analysis by using Completely Randomized Design (CRD) as described by Panse and Sukhatme (1967).

Fig.1 Flow diagram for preparation of bael fruit powder milk shake



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RESULTS AND DISCUSSION

Sensory evaluation of bael fruit powder milk shake:

The papaya milk shake prepared from different blends of bael fruit powder and buffalo milk were subjected to sensory evaluation and scores recorded for different parameter are presented in Table 1.

Table: 1 Organoleptic evaluation of bael powder milk shake

Sample code	Colour	Flavour	Taste	Mouthfeel	Overall acceptability
M0	9.0	9.0	8.5	8.5	9.0
M1	9.0	9.0	8.5	9.0	8.6
M2	9.0	9.0	8.7	8.9	8.9
M3	8.5	8.0	8.0	8.5	8.0
M4	7.0	7.5	7.5	7.0	7.0
M5	7.0	6.5	6.5	6.0	6.0

COLOUR AND APPEARANCE:

The mean colour and appearance score for different treatment of bael fruit powder milk shake ranged from 7.0 to 9.0. The treatments M0, M1, M2 (9.0) was found to be significantly superior over the rest of the treatments. It was observed that increased level of bael fruit powder in bael fruit powder milk shake decreased the score of colour and appearance slightly.

Flavour:

It was observed that mean score for flavour of bael fruit powder milk shake for treatments M0, M1, M2, M3, M4 and M5 was 9.0, 9.0, 9.0, 8.0, 7.5 and 6.5 respectively. The treatments M0, M1 and M2, was significantly superior over M3, M4 and M5 treatments.

Mouthfeel:

The highest mouthfeel score was observed for treatments M1 (9.0) and M2 (8.9). It was also observed that increasing the per cent of bael fruit powder in the blend was not much accepted by the judges. bael fruit powder blending of 02 per cent (M1) was most accepted.

Overall Acceptability:

The mean score for treatments M0, M1, M2, M3, M4 and M5 was 9.0, 8.6, 8.9, 8.0, 7.0 and 6.0, respectively. The treatment M0 (9.0), M1 (8.6) and M2 (8.9) ranked between like very much to like extremely. The treatment M2 (8.56) was most acceptable by the judges so blending of 05 per cent bael fruit pulp in the blend was most acceptable than the other treatment combinations.

CONCLUSION

Incorporation of their bael fruit powder was found also to improve the quality of milk shake. The optimum level of bael fruit powder could be incorporated in the blend up to 05 per cent. The higher proportion powder utilization in the blend scored towards lower side by panel of judges.

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