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Studies on sensory and microbial quality of herbal based flavoured beverage by using wheat grass powder and honey

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Abstract

Now a days, flavoured beverage become most nutritive for all age of people. In recent time, nutrient-rich flavored milk is available in different variety of flavors and offers unique nutrient package of nine essential nutrients as unflavored milk. The present study was conducted to know the sensory attributes of flavoured milk with Wheat grass powder and Honey. In this study, flavoured milk was prepared from toned milk. Honey was added with different levels viz. 7% (T1), 8% (T2), and 9% (T3) of milk and Wheat grass powder was added @ 8 percent of milk. Addition of wheat grass powder and honey improved sensory quality and acceptability of the product. The most acceptable quality flavoured milk could be prepared by using honey at the rate of 10 percent of the toned milk.

Keywords: wheat grass powder, honey, flavoured beverage

Introduction

Flavoured beverage are made in which sugar, flavouring agents, colouring material are added. It contains all the constituents of milk. It is good source of protein, carbohydrate, mineral and provides energy and water to digest the food, regulate body temperature and prevent dehydration. Flavoured beverage is available with traditional flavors such as chocolate as well as innovative flavours including strawberry, vanilla, mocha and root beer. As most popular beverage in schools, flavoured beverage is a highly palatable, nourishing beverage that can help particularly children to meet their current daily requirement to dairy food and calcium intake. Among the different flavors in flavored beverage (for example, chocolate, strawberry, and vanilla), chocolate milk is the most popular milk flavor for both children and adults in the United States Thompson *et al.*, 2004) [11]. Despite the important nutrient contributions flavoured beverage makes to the diet, concerns about the potential effects of the added sugar and flavorings in flavored beverage have raised questions regarding the role of flavoured beverage in a healthy diet. Flavoured beverage can increase milk consumption among both adults and children and also provides essential nutrients like plain milk and other milk products (Murphy *et al.*, 2008) [7].

In order to develop a holistic approach for the treatment of chronic diseases, scientists and clinicians world over are now a days, conducting extensive studies to evaluate the efficacy of wheat grass (in the form of powder or juice) and also for the better understanding of therapeutic potential of this medicinal grass (Rajesh *et al.*, 2011). A study done on MCF-7 breast cancer lines with different extracts show highest free radical scavenging activity and the highest cell killing property (Tandon *et al.*, 2011) [10], (Kulkarni *et al.*, 2006) [6]

Materials and Methods

The present investigation “Studies on sensory quality of herbal based flavoured beverage by using wheat grass powder and honey” was carried out in the research laboratory of Warner College of Dairy Technology, Sam Higginbottom University of Agriculture, Technology & sciences, Allahabad, 211007, U.P India.

Procurement and collection of ingredients

- Toned milk- It was purchased from Aggies Student Training Dairy, SHUATS, Allahabad
- Wheat Grass Powder – It was procured from Patanjali Store at local market of Allahabad.
- Honey – It was procured from Patanjali Store at local market of Allahabad.
- Colour – Apple green colour was purchased from local market of Allahabad.

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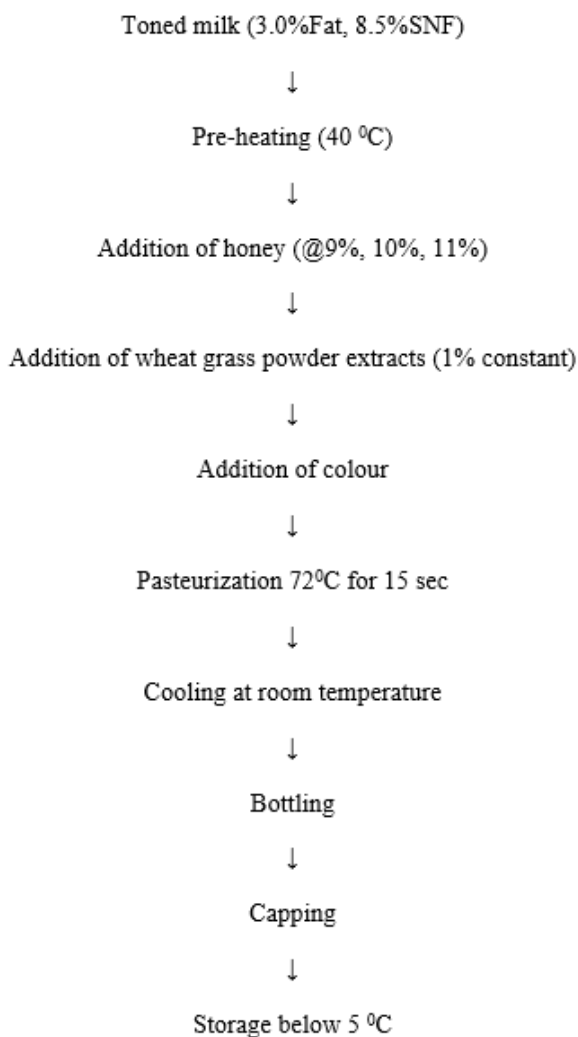
Treatment combination

T ₀	Toned milk + Wheat grass powder extract (1%) + Sugar (7%).
T ₁	Toned milk + Wheat grass powder extract (1%) + Honey (9%) + colour (0.2%).
T ₂	Toned milk + Wheat grass powder extract (1%) + Honey (10%) + colour (0.2%).
T ₃	Toned milk + Wheat grass powder extract (1%) + Honey (11%) + colour (0.2%).

Preparation of wheat grass powder extract

For preparation of wheat grass powder extract, 60 ml of distilled water was taken in a beaker. 1% wheat grass powder was added and mixed well in distilled water (5 gm. in 500 ml) and then the solution was subjected to heat treatment at 80 °C for 20 minute. Solution was strained through the muslin cloth.

Flow diagram for manufacturing herbal based flavoured beverage



Sensory and microbial evaluation

The flavoured milk prepared under different treatment combinations were subjected to sensory evaluation by a panel of judges for colour and appearance, flavour consistency and overall acceptability. The scoring was done on 9 point hedonic scale as described by (Gupta 1976) [3]. Standard plate count (SPC) and Coliform count of the product sample was estimated by the method as described in SP: 18 (Part XI) – 1981.

Statistical analysis

The data obtained were statistically analyzed for ANOVA using MS Excel software, 2007.

Sensory evaluation

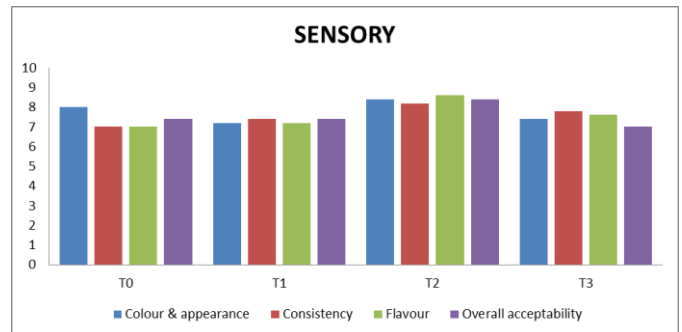


Fig 1: Graph showing the organoleptic score of flavoured beverage of different treatments

It was observed from Fig. 1 that treatment T₂ has the highest organoleptic score followed by T₀, T₁, and T₃. The variation in sensory scores viz., flavour, colour and appearance, consistency and overall acceptability where found to be significantly different ($P < 0.05$). The score in respect of flavour ranged between 7.00 to 7.60. In case of consistency the score recorded seem to be highest for T₂ (8.20) and lowest in T₀ (7.00). In case of colour and appearance the score recorded seem to be highest for T₂ (8.40) and lowest in T₃ (7.40). In case of overall acceptability the score recorded seem to be highest for T₂ (8.40) and lowest in T₃ (7.00).

Microbiological analysis

Table 1: Microbial analysis of Beverage (Mean)

Treatments	T ₀	T ₁	T ₂	T ₃	CD Value
SPC(10 ³ cfu/ml)	10	9.20	10.20	11.80	1.42
Coliform test (10 ¹ cfu/ml)	Nil	Nil	Nil	Nil	0.00

*Average of five trials.

The highest mean S.P.C ($\times 10^3$) cfu/g was recorded in the sample of T₃ (11.80), followed by T₂ (10.20) and T₁ (10). There was significant difference between the treatments. None of the samples of Flavoured beverage samples showed the presence of the coliforms which indicates that proper hygienic conditions were maintained during the preparation and storage of the product.

Conclusion

Flavoured beverage with wheat grass powder proved to be a wheats one beverage for all age group. It is nutrition, relishing, and refreshing. The present studies conduct that the beverage made with 1% wheat grass powder and 10% honey form to be the best in sensory quality.

The product has great market potential for commercial man population.

References

1. Doner LW. The sugars of honey – a review. Journal of Science and Agriculture, 1977.
2. Fernandes CJ, O'Donovan DJ. Natural antioxidant therapy for patients with haemolytic anemia. Indian Pediatrics. 2005; 42:618-619.
3. Gupta SK. Sensory evaluation in food industry. Indian Dairyman. 1976; 28(7):293-295.

4. ISI. IS 1479 Determination of total solids Part – II, 1961.
5. ISI. Indian Standard Institute. Hand Book for Food Analysis Part XI, Dairy Products, SP. 1981; 18(Part XI).
6. Kulkarni SD, Tilak JC, Acharya R, Rajurkar NS, Devasagayam TP, Reddy AV. Evaluation of the antioxidant activity of wheatgrass (*Triticumaestivum* L.) as a function of growth under different conditions. *Phytotherapy Res.* 2006; 20(3):288-27.
7. Murphy MM, Douglass JS, Johnson RK. *J Am Diet Assoc.* 2008; 108:631.
8. Nenonen MT, Helve TA, Rauma AL, Hanninen OO. Uncooked, Lactobacilli-rich, Vegan Food and Rheumatoid Arthritis. *British Journal of Rheumatology.* 1998; 37:274-281.
9. Rajeshkumar, Patil GR, Rajor RB. Development of formulation of flavoured milk like beverages from Cheese whey. *Asian J Dairy Res.* 1989; 6(3):121-124.
10. Tandon S, Arora A, Singh S, Monga J, Arora S. Antioxidant Profiling of *Triticum aestivum* (wheatgrass) and its Antiproliferative Activity In MCF-7 Breast Cancer Cell Line. *J of Pharm Res.* 2011; 4(12):4601-4.
11. Thompson W, Milstead A. *Obes Res.* 2004; 12:582.