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Sensory evaluation of flavoured milk enriched with lemongrass juice

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Abstract
A study on "Sensory evaluation of" flavoured milk enriched with lemongrass juice was carried out by using buffalo milk. Flavoured milk was prepared from buffalo skim milk. Lemongrass juice was added at different levels viz. of 2.5, 5, 7.5 and 10 percent of milk. Cymbopogon citratus (flesh) type lemongrass juice was used. Sugar was added at the rate 8 percent of milk. From the results of present study, it was concluded that lemongrass juice can be successfully utilize for preparation of flavoured milk. Addition of lemongrass juice 37.5 in flavoured milk improved sensory quality and acceptability of the product.

Keywords: flavoured milk, lemongrass juice, sensory quality

Introduction
Milk is regarded as rich source of nutrients as it contains high quality proteins, lactose, and flavour enriching fat. The perfect composition of milk not only recommends itself for growing children but also suited to satisfy energy needs of adult. Milk also provides protection against ill health and promotes good health. Dairy sector is important not only as the producer of highly nutritious food products, but also for the sustenance of poor farmers and all over prosperity of the farming community. Annual milk production of India is estimated as 146.3 million tonnes during the year 2014-15.

Flavoured milk is a sweetened dairy drink made with milk sugar, colouring and flavouring agent. The beverages industry is jumping on the milk train. Flavoured sugared, even carbonated the dairy drink is being dressed up to make in the cool more healthful alternative to other beverages products. Globally flavoured milk is among the fastest growing drink sector particularly in markets. This reflects the steady shift to consumers- across all ages group – from synthetic drinks to real and nutritional drinks all over the world.

Lemongrass (cymbopogan) also called Cochin grass and Malabar grass, is perennial grass native to India. Its include more than 50 species of grasses native to tropical southern India and Asia. The best known cultivated variety is ornamental lemongrass (cymbopogan citrates). The matured lemongrass juice has high nutritive value, promotes healthy digestion as well as taste pretty much like lemon. It will enhance palatibility.

Materials and Methods
For preparation of flavoured milk, buffalo milk was received from local market, College of Agricultural Biotechnology,nashik, whereas lemongrass juice, gelatin, and sugar were purchased from the local market.

The flavoured milk was prepared as per procedure given by Mr. Balasaheb Sonwalkar (M.Sc.) Student, Department of Animal Husbandry and Dairy Science, Dr. B.S.Konkan Krishi Vidyapeeth (Agricultural University), Dapoli, Maharashtra, India (2016 -17) with slight modifications. Some preliminary trials were conducted to determine the range and appropriate stage of lemongrass juice for incorporation in buffalo skim milk. The trials with four levels of lemongrass juice (2.5, 5, 7.5, 10) percent lemongrass juice.

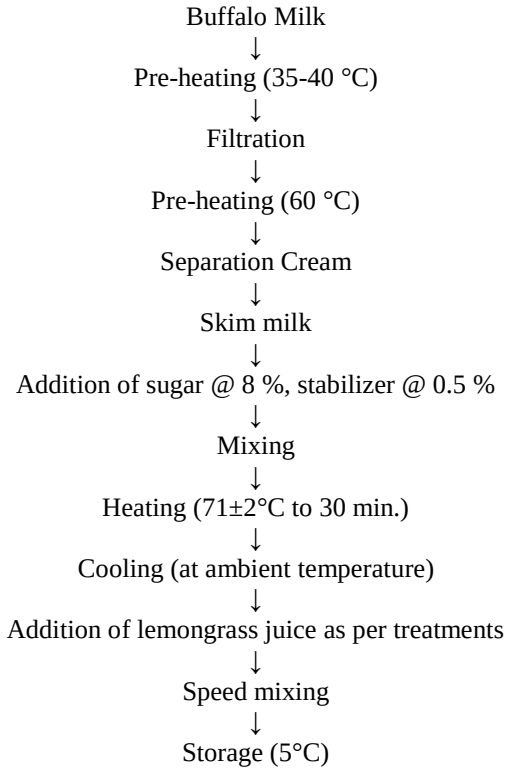

Fig 1: Flow diagram for preparation of flavoured milk

Results and Discussion

From results of the present study it was concluded that, the lemongrass juice could successfully be utilized for preparation of flavoured milk. Addition of lemongrass juice in flavoured milk improved sensory quality and acceptability of the product. For fortification of flavoured milk the optimum level of lemongrass juice was found to be superior over rest of treatments. The most acceptable quality flavoured milk can be prepared by using 7.5 percent lemongrass juice. Such replacement did not affect appreciably the composition of flavoured milk. Lemongrass had a positive effect.

on sensory attributes of flavoured milk on its acceptability and consumption. Besides peculiar flavour, it also adds nutritional importance to the product.

On the basis of sensory evaluation parameters treatment T_3 addition of 7.5 percent lemongrass juice was observed to be the best treatment.

Table 1: sensory characteristics of flavoured milk

Sample	General Appearance and Colour	Body and Texture	Flavour	Taste	Overall Acceptability
T_0	8.2	8.4	8.0	8.1	8.17
T_1	8.3	8.4	8.12	8.56	8.34
T_2	8.4	8.7	8.42	8.45	8.46
T_3	8.74	8.73	8.61	8.7	8.6
T_4	8.17	8.2	7.9	7.4	7.9
SE±	0.30	0.50	1.02	0.50	0.57
CD	2.50	4.1	8.3	4.12	4.6

General Appearanceand Colour

The highest score for color and appearance was recorded for T_3 (8.74) i.e. flavoured milk prepared with 7.5 percent lemongrass juice, followed by flavoured milk with 2.5 percent lemongrass juice having the score of 8.3 (T_1). Further, the score was decreased significantly in T_0, and T_4. The lowest score was noticed at T_4 i.e. flavoured milk prepared with 10 percent lemongrass juice (8.17)

T_0 having white colour because the flavouring agent was not add. T_3 having greenish colour this having lemongrass juice this treatment having highest score of colour.

Body and Texture

The most acceptable product in the present study was observed to be the flavoured milk prepared by 7.5 percent lemongrass juice (T_3) with overall acceptable score of 8.73. While the lowest score was obtained by flavoured milk with 10 percent lemongrass juice (T_4) scoring 8.2.

Flavour

The flavoured milk incorporated with 7.5 percent lemongrass juice (T_3) recorded highest score of 8.61 for flavour followed by flavoured milk incorporated with 2.5 percent lemongrass juice (T_1) scoring 8.12. flavoured milk prepared with 10 percent lemongrass juice (T_4) had significantly lowest score 7.9. The differences in score obtained by all the treatments were found to be significant.

Taste

As compare to the other treatment the T_3 having highest score 8.7 in that 7.5 percent lemongrass juice was added further, treatment T_1, T_2 and T_4 having decreased significantly score.

Overall acceptability

The overall acceptability score was determined on the basis of average of the total score obtained for different sensory attributes viz. colour and general appearance, flavour and body and texture. The highest acceptability score of 8.6 was recorded at 7.5percent level of lemongrass juice as this product showed attractive greenish colour of lemongrass and its peculiar flavour as compared to the rest of treatments.

Conclusion

From the results of the present investigation, it may be concluded that lemongrass juice could be successfully utilized for preparation of flavoured milk. Addition of lemongrass juice in flavoured milk improved the sensory quality and acceptability of the product. Besides typical flavour, it also adds medicinal properties to the product. Such flavouring did not appreciably affect the composition of flavoured milk. The most acceptable quality flavoured milk can be prepared by using 7.5 percent lemongrass juice. Flavoured milk will be beneficial to the health conscious people.

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