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Development and Sensory Evaluation of naturally flavoured Papaya Spiced ready-to-serve (RTS) beverage

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ABSTRACT

The Ready-to-Serve (RTS) fruit beverage having an immense potential in food industry. In the present investigation it has been made to prepare a Ready-to-Serve (RTS) beverage made from papaya juice with different naturally flavoured spice extracts. Among four different proportions of spices and from the organoleptic evaluation, the highly accepted ratio was 4% cumin seed + 1% black pepper + 1.5% mint + 1.5% lemon with papaya juice. This organoleptic evaluation was done by the trained panel by using 9-Point Hedonic Rating Scale. The overall acceptability of this papaya spiced RTS beverage was 9.0 due to its good taste, appearance, colour and flavour.

Keywords:

Ready-to-Serve(RTS), beverage, spice, Hedonic rating scale, organoleptic evaluation, overall acceptability.

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INTRODUCTION

Fruits and vegetables are protective foods which are rich in phytochemicals as carotenoids, polyphenols, vitamins and minerals besides introducing complex carbohydrates and fibres (Heber, 2004). However, the modern life habits led consumers to decrease the consumption of fresh food produce (Zhou et.al., 2015).

Papaya (Carica papaya) is the powerbox of nutrients and is available throughout the year in India. Papaya is the species in genus Carica of the plant family named Caricaceae. Papaya is a common fruit with high nutritive and medicinal values. Papaya contains high antioxidant nutrients such as carotenes, flavonoids and vitamin C as well as folate and pantothenic acid. Favourable amount of fibre and minerals like magnesium also found in papaya. These all nutritional values help to improve cardiovascular diseases and also fight against colon cancer (Anonymous, 2017).

Post-harvest losses of papaya, is very high. Developing value added nutritive food products utilizing papaya would help to prevent its losses and also improve market demand. The present study involved development of papaya spiced ready-to-serve (RTS) beverage. It has been reported that the organoleptic quality of RTS beverage prepared from juice extracts could be enhanced by the addition of spice extracts of cumin seed, black pepper, lemon mint etc. The apart from their appetizing properties of added spice extracts of cumin seed, black pepper, lemon and mint also possess medicinal and therapeutic values, which have a good potential effect on various functional processes of human health. To minimal the use of synthetic food additives which causes various health hazards, the use of naturally occuring colours, flavours and preservatives having a positive demand. The main objective of this study is to standardize and sensory evaluation of papaya spiced ready-to-serve (RTS) beverage

with different flavour extracts.

MATERIALS AND METHODS

Selection and procurement of raw materials:

The fresh and fully riped papaya (Carica papaya), spices such as cumin seed, black pepper, mint, lemon and sugar were collected from the local market of Jorhat district.

Preparation of papaya spiced juice:

The riped papayas were washed under the clean water and peeled them. After peeling, removed the seeds from the papaya and cut them into small pieces. These pieces were put into the grinder and grind it. Papaya pulps were kept on the muslin cloth and extract the juice. As per requirement of sugar and water was added to the strained juice. Now add spices such as cumin seeds and black pepper in a muslin cloth bag and put it under the juice and heat the mixture. After heating the flovour of the spices were come out into the juice and cooled them. Then add extracts of mint and lemon into the juice and mixed them properly. Now the papaya spiced RTS beverage filled into sterilized glass bottles (minimum headspace 2c.m.) for storing.

The formulated product was evaluated for various organoleptic attributes. The combinations of papaya spiced RTS are:

i. T1: 4% cumin seed + 1% black pepper + 1.5% mint + 1.5% lemon
ii. T2: 4% cumin seed + 1% black pepper + 2.5% mint + 2.5% lemon
iii. T3: 4% cumin seed + 1% black pepper + 3.5% mint + 3.5% lemon
iv. T4: 4% cumin seed + 1% black pepper + 4.5% mint + 4.5% lemon

RESULTS AND DISCUSSION

The organoleptic evaluation of food products is the basic criterion for the acceptability of any product by the consumer. Unless the food product meets the desired standards of taste, flavour, texture etc., the consumer will not be able to accept the product. Organoleptic evaluation is a scientific discipline used to evoke measure, analyze and interpret reactions to those characteristics of foods and materials as they are perceived by the senses of sight, taste, touch and hearing. Organoleptic evaluation was done by trained panel members by using 9-point Hedonic Rating Scale. Organoleptic Evaluation Card for 9-point Hedonic Rating Scale:

Name:..... Date: .....

Product: ..... Time: .....

Test this sample and check appropriate box how much you like or dislike the sample.

Like extremely .....

Like very much .....

Like moderately .....

Like slightly .....

Neither like nor dislike .....

Dislike slightly .....

Dislike moderately .....

Dislike very much .....

Dislike extremely .....

Comments: Signature

Table1: Mean sensory scores obtained for the papaya spiced RTS beverage

Sensory characteristics	Treatment of various proportions of spices			
	T_1	T_2	T_3	T_4
Colour	9	8	7	7
Appearance	9	8	7	6
Flavour	9	8	8	6
Taste	9	8	7	6
Overall acceptability	9	8	7	6

On the basis of overall acceptability from the organoleptic evaluation of the papaya spiced RTS beverage by adding various proportions of spice extracts. Among four different combinations, the papaya spiced RTS was highly acceptable with combination of 4% cumin seed + 1% black pepper + 1.5% mint + 1.5% lemon. This ratio of the RTS beverage was well accepted due to good colour, flavour, appearance and taste.

CONCLUSION

The experiment demonstrated that the feasibility of preparing papaya spiced RTS beverage with good colour, taste, appearance and flavour. It also indicated that the papaya RTS beverage with addition of various spice extracts was highly acceptable. This fruit beverage with immense good health effects could be easily adopted for large scale production by the industry as well as provides food security to local people.

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