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Sensory tolerability of miscellaneous herbal nectar from bottle gourd, mint, lime, sugar syrup

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Abstract
Nectars are beverages formulated with the juice or pulp of one or more herbal juice, plus water and sugar in concentrations resulting in a "ready-to-drink" product. The market for such products has greatly expanded fruits mixtures present of series of advantages such as the combination of different aromas and flavors and the sum of their nutritional component. The objective of this work was to develop a nectar based on bottle gourd, mint and lime juice enriched with the vitamin c, zinc, iron and magnesium thus helping in improving overall health, optimizing the formulating using sensory consumer test and response surface statistical methodology eleven formulation was prepared different concentration of bottle gourd its help fight constipation as it is fiber rich because of its fiber have low fat content. The sensory tests were carried out with 20 non-trained panelists using a structured 9 point hedonic scale of evaluate overall acceptance. The overall acceptance of nectars of different formulation varied from 5("neither liked nor disliked") to more than 7 ("liked moderately") showing that some products can be considered adequate to consumer, like the nectar produced from 70%bottle gourd, mint5%, lime juice 5%, 20%sugar syrup the sensory acceptance of nectar was positively affected by increases in the concentrations of bottle gourd and mint, lime and sugar syrup. Thus some products presented good sensory acceptance suggesting commercial potential.

Keywords: beverage, ready to drink, blend, sensory, bottle gourd, mint, lime, sugar syrup

Introduction
Nectar is a non-fermented beverage, produced from the dissolution of the edible portion of the fruit and sugars in water, for direct consumption, and could be added of acid, respecting the characteristics and compositions established for each fruit, such as sensory attributes, juice content, soluble solids, total acidity, and total sugar (Brasil, 2003). Fruit blends present a series of advantages, such as the possibility of combining different aromas and flavors, plus the sum of nutritionally different components.

Fruit and vegetable nectars are beverages produced from purees, juices, or concentrates of either, blended with water and sugar, honey, syrups, or sweeteners. 83 Fruit-vegetable nectar blends are reported under their components (i.e. fruit nectar and vegetable nectar).

Bottle gourd is considered to be indigenous to various regions of India. Bottle Gourd is used as a vegetable and is a good source of vitamin C. Traditionally, it is used as vermifuge, purgative, diuretic and as an anti-inflammatory agent. It is reported to possess antithepatoxic and antiulcer activities. Various old medicinal systems such Ayurveda, have praised bottle gourd for nutrient rich contents and their magical effects in many health ailments including high blood cholesterol, diabetes, overweight, digestive problems. Approximate 96 percent of water content in bottle gourd makes it ideal for extracting juice. Consuming bottle gourd juice shows its effects in cooling, calming and fat it is also great for weight loss and protect the high cholesterol levels. Regular consumption of a cups of Bottle Gourd juice with a glass of water in empty stomach in early morning helps to reduce the high blood pressure and cholesterol levels and makes the heart healthy. Mint is packed with antioxidants and phytonurients that can work wonders for our stomach. The menthol present in pudina helps the enzymes necessary for digestion. The herb parts contain many essential volatile oils like menthol, menthone, menthol acetate. Mint leaves are packed with anti-bacterial and anti-inflammatory properties. Mint contains rosmarinic acid that acts as a powerful antioxidant. Mint composes numerous plant derived chemical compounds that are known to anti-oxidant, disease-preventing and health promoting properties. Lime juice and its natural oils are very beneficial for skin when consumed orally or applied externally. It rejuvenates the skin, keeps it shining, protects it from infections and reduces body odor due to the presence of a large amount of vitamin-C and Flavonoids. Those are both class-1 antioxidants, and have antibiotic and disinfectant properties. According to the American Diabetes Association, limes and other citrus fruits are considered a diabetes super food for a number of reasons. Mainly, the high levels of soluble fiber found in limes make it an ideal dietary aid to help regulate the body's absorption of sugar into the bloodstream, reducing the occurrence of blood sugar spikes that are a serious risk to diabetic patients.

The objective of this work was to develop nectar based on bottle gourd and mint enriched with vitamin C present in lime juice, and to optimize the formulation using sensory consumer tests and a response surface statistical methodology.

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:

Material: Commercial frozen pasteurized whole bottle guard, passion fruit juice, and mint and lime juice plus mineral water and sugar were used in this work.

Experimental design: Data obtained from the organoleptic, analysis data were statistically analyzed by using analysis of variance-two way classification, critical difference.

Results and Discussions

Organoleptic characteristics of blended nectar

1. Colour & appearance in blended nectar

From the perusal of data on colour & appearance score in Blended Nectar samples of different treatments and control the highest mean colour & appearance score recorded in the Blended nectar sample of T1(8.30) followed by T2 (7.68), T3 (7.02) & T0 (6.41).

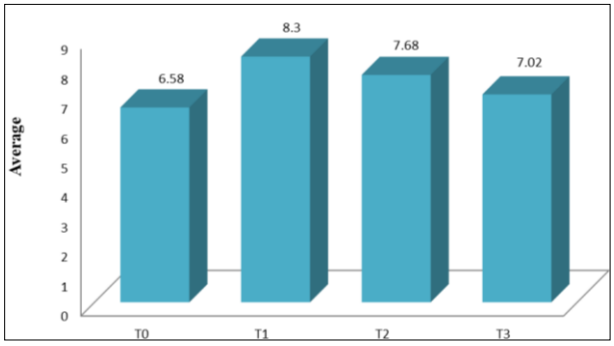

Fig 1: Average score for Colour and Appearance of control and experimental Blended Nectar

2. Consistency score in blended nectar

From the perusal of data on consistency score in Blended Nectar samples of different treatments and control the highest mean consistency score was recorded in the Blended Nectar sample of T1 (8.02) followed by T2 (7.68), T3 (7.48) and T0 (6.61).

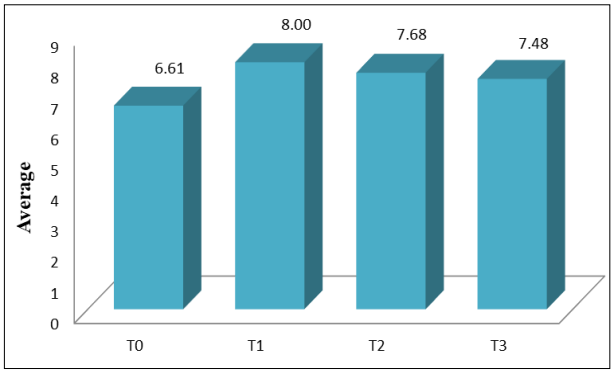

Fig 2: Average score for Consistency of control and experimental Blended Nectar.

3. Flavour & taste score in blended nectar

From the perusal of data on Flavour and taste score in Blended Nectar samples of different treatments and control the highest mean Flavour and taste score was recorded in the Blended Nectar sample of T1(8.36) followed by T2 (7.62), T3 (7.30) and T0 (6.68).

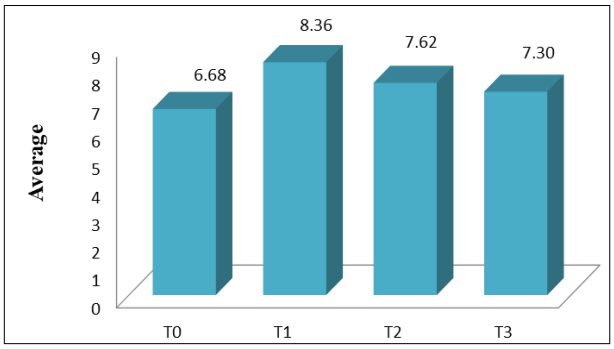

Fig 3: Average score for flavour & taste of control and experimental Blended Nectar

4. Overall acceptability in blended nectar

Data Obtained from the analysis of overall acceptability in Blended nectar samples of different treatments it has been observed that the mean overall acceptability was recorded in T1 (8.34), T2 (7.74), T3 (7.21), and T0 (6.65) of Blended nectar sample respectively.

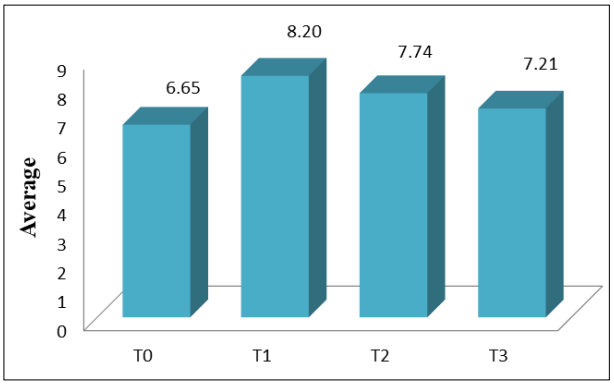

Fig 3: Average for Overall Acceptability of control and experimental Blended Nectar

Conclusion

the blend selected is a rich source of antioxidants and phenols. Therefore, the blend can be successfully utilized for the preparation of ready-to-serve nectars and other value added products. The bottle guard, mint, lime based nectars further enhanced its medicinal properties.

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