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Blending of Kiwi Guava Mint for preparation of Cordial

Abstract— Cordial is type of drink which is non-alcoholic and containing 25% of fruit juice or pulp and has TSS of 40-50%. It also contains 1% of acid and has 350ppm sulphur dioxide or 600ppm of sodium benzoate needed for the preservation purpose. It is type of crush that is diluted with water before serving. Kiwi and guava are filled with nutrients and also have lot of health benefits. Organoleptic evaluation was also followed after the preparation and the acceptability was found out.

Keywords— Kiwifruit, Handrefractometer, Sensory analysis, formulation, bioactive
Compounds, pasteurization, protocol, hedonic scale.

I. Introduction

Fruits and vegetables are important constituents of the diet and provide significant

quantities of nutrients, especially vitamins, sugars, minerals and fiber. The habit of eating fruits and vegetables can help to prevent ¹ the risk of cancer, heart diseases, reduction of stress and aging as the integrated action of oxygen radicals scavengers like β carotene and ascorbic acid with help of calcium and dietary fibers.

Ready to serve beverages are sold in a packaged form, ready for consumption. Fruit based beverages are relished when served chilled, particularly during summers. These are delicious as well as nutritious containing the goodness of fresh fruit. These spices along with their appetizing properties have ¹⁰ medicinal and therapeutic values, that directly effect on human health, as they have many functional processes. Squash beverages are prepared numerously with the help of citrus fruit, sugar and water mixed together. The fruits like pineapple, orange, lime, litchi, passion fruit, and other local fruits can also be used for production of fruit beverages.

A. KIWI

¹⁴ Vitamins C, E, and A are abundant in kiwifruit. It contains dietary fibre as well as minerals such as potassium, phosphorus, magnesium, and copper. It has the unique ability to remove excess salt from the body, which is beneficial to the normal person who consumes too much sodium in his everyday life. In addition, the green fruit is high in antioxidants and digestive enzymes. Kiwifruit is supposed to improve respiratory health and alleviate nighttime coughing. It has been revered for its therapeutic virtues since ancient times and is thought to be of Chinese origin. It is currently known as the New Zealand national fruit rather than its previous names, Yang tao or Chinese gooseberry. It apparently made its way to New Zealand via missionaries and became so popular in the country that it began to be cultivated professionally and marketed as 'kiwi' (bearing close resemblance to their national bird).

B. GAUVA

This tropical fruit, called commonly as 'Peru', is easily available. And because they are quite cheap when we consider its cost, all of us can afford it. In the next of our series on Far Eastern plant we look at Guava or *Psidium guajava* in folk medicine extracts of roots, bark,

and leaves are used to treat gastroenteritis. Guavas are sold in different stages of its ripeness. However, it's best to eat them ¹³ within one to two days after ripening. You will not believe the health benefits which this fruit has that we take for granted.

C. MINT

Mint, often ⁵ known as mentha, is a genus or group of about 15 to 20 plant species, including peppermint and spearmint. Menthol piperita, also known as mint oil, is commonly used in cookies, toothpaste, gum, candies, and beauty goods, while the leaves are used for teas and cuisine, either fresh or dried. Herbs are plants that are prized for their medicinal and fragrant properties, and they are frequently planted and harvested for their special properties.

II. Key Details

A. Objectives

1. To develop a nutritious squash drink from Kiwi and Guava.
2. To study the physical aspects of the squash like colour, taste, appearance.
3. To evaluate the quality of nutritious squash drink through sensory characteristics.
4. To evaluate the overall quality of the blended mixture using sensory analysis.

B. Review of literature

¹ Fruits and vegetables are effective in the treatment of cardiovascular disease. The antioxidants and other components of fruits and vegetables explain their positive effects. These nutrients may act individually or together to protect lipoproteins and vascular cells against oxidation, or by other mechanisms such as lowering plasma lipid levels (LDL cholesterol, triglycerides), and platelet aggregation response. The kiwi fruit, which is abundant in ² vitamin C, vitamin E, and polyphenols, may be advantageous in cardiovascular disease; however, little is known regarding its cardiac preventive benefits.

Platelets have a ¹⁵ role in the development of atherosclerotic disease, and drugs that limit platelet activity reduce the incidence and severity of illness.

According to Kawaiietal (2000), the main reason for its cultivation is for its alkaloids, which have anticancer activities, and the antibacterial potential in crude extracts of different parts of Lemon (viz., leaves, stem, root, and flower) against clinically significant bacterial strains has been reported.

Aronson, Aronson (2001): Flavonoids are commonly found in glycosylated forms in plants, and the sugar moiety plays a significant role in influencing their bioavailability. Citrus fruits, in addition to fibre, contain bioactive substances ⁷ such as polyphenols, the most significant of which is vitamin C (or ascorbic acid), and they can prevent and cure vitamin C deficiency, which is the cause of scurvy. The existing literature on the many elements of orange-beetroot RTS formulation, development, nutritional, sensory, and storage studies have been reviewed as noted below.

According to Sohnet al. (2004), flavonoids can serve as direct antioxidants and free radical scavengers, as well as modify enzyme activity and suppress cell proliferation (Duthie and Crozier, 2000). They appear to perform a defensive role in plants, preventing pathogens such as bacteria, fungus, and viruses from entering.

C. Raw materials and Equipment's

Kiwi, Guava, Mint, Sugar are the basic things needed along with that various instrument used were knife, plates, peeler, mixture, strainer, weighting balance, hand refractometer.

D. Packaging

Packaging is the art of covering or wrapping the products for transport, storage, disposal and utilization. Packaging protects food from mechanical damage such as mechanical shock, vibration, compression, temperature and electronic discharge. Packaging is also useful for protecting food from chemical changes which is not good for quality of final product. It does not transport oxygen, water vapor and other gases; it helps to increase shelf life of product. The Kiwi-Gauva mint squash were packed in PET bottles with cap. The PET and Glass bottles are mostly used for the packaging of RTS beverages.

E. Formulation

Many permutation and combination with food products are made with help of combining raw materials in specific proportions in a certain orderly manner, and study on the outcome of these various formulations of the product help in product design. Three samples were made by varying Kiwi fruit, Guava, proportions so as to make easy to know characteristics of final product. The formulation is presented as below in table.

Table 1

Sample formulation

Sr. No.

Ingredients

Sample A

Sample B

Sample C

1.

Kiwi pulp

15gm

7gm

18 gm

2.

Guava pulp

10 gm

18 gm

7 gm

3.

Mint

3 ml

3 ml

3 ml

4.

Sugar

38 gm

38 gm

38 gm

5.

Citric acid

0.3 gm

0.3 gm

0.3 gm

6.

Sodium Benzoate

0.01 gm

0.01 gm

0.01 gm

7.

Water

34 ml

34 ml

34 ml

F. Preparation method

1. Selection of raw material: good quality kiwi and guava were purchased from market and blended together in the preparation of Kiwi-Guava mint squash.
2. Washing: Kiwi fruit, guava fruit and mint are washed to remove dirt, dust and other contaminant on the surface.
3. Peeling: After washing of fruits and mint all the roots and fruits are peeled out.
4. Cutting: After peeling the fruits are cut in small size required for the juice extraction by

grinder.

5. Pulp extraction: Pulp extraction was done by using mixer. All juices of ingredient are extracting separately and store. Mint water were done by adding mint to hot water and mixing with sugar syrup. Kiwi guava pulp was extracted.

6. Mixing: After pulp extraction, above prepared Kiwi-Guava pulp (25%) mix with sugar syrup (75%) (Upto 40 Brix) and preparation of Squash was done.

7. Pasteurization: Squash is pasteurized at 80°C for 15 min to remove the contaminants from raw pulp.

8. Filling and capping: The squash was filled in sterile a glass bottles (capacity 200 ml) and capping

9. Pasteurization: Glass bottles are pasteurized at 85°C for 15-20 sec.

10. Labelling: Labelling was done.

11. Storage: Storage in cool and dry place or in refrigeration condition

G. Sensory method

Protocol for sensory analysis:

Sensory evaluation is a study that helps with examination ¹² and measures human responses to the composition of food. e.g., appearance, touch, flavor, texture, color, appearance and taste. Various scales or methods are used for the sensory assessment of product. For sensory analysis of my squash three samples were prepared and sensory was done ¹¹ with the help of semi-trained panel of 9 members. For sensory analysis of my squash, hedonic scale was used for better result. It is 50 most widely used scale for measuring food acceptability is the 9-point hedonic scale. On this scale rating or marks are given according to acceptability of product. Various parameters are included in this scale for sensory analysis such as color, flavor, texture, taste, appearance, overall acceptability, etc.

Sensory evaluation can be drawn to:

- Compare similarities/differences in a range of products.
- Assess a range of existing food products.

- Examine food samples for improvements.
- Gauge reactions to a product, e.g. acceptable or unacceptable.
- Certain specific characteristics of an ingredient or food product.
- Check whether a final dish/food product meets its original specification.
- Provide objective and subjective feedback data to enable informed decisions to be made.

ACCEPTANCE: Sample B was excepted by the panel. Finally accepted product was selected.

H. Results of sensory analysis

11 With the help of this hedonic scale sensory analysis results are obtained. These results are shown below:

Figure 1. Average sensory analysis data

III. Conclusions

Now a day's wide range of Squash drink 16 are available in the market. To avoid such a dangerous health disease, consumption of healthy and nutritious food is necessary.

As a combination of minerals, vitamins, antioxidants and bioactive compounds in the kiwi and guava, they were used in preparation of squash drink. Healthy eating is just 8 not about strict dietary limitations, but also staying unrealistically thin, or depriving yourself of the foods you love.

Foods containing bioactive compound can provide many health benefits as well, such as helping to maintain weight and lowering your risk of diabetes, cancer and heart disease.

Successful incorporation of Kiwi, Guava, Mint in such type of squash beverages was studied.

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