Organoleptic evaluation of herbal tea infusion prepared from guava leaves and orange peel

Rukhsana Rahman
Research Scholar SKUAST jammu
Shristi Gupta
Research Scholar Banasthali vidyapith Jaipur.
Jaspreet kaur
Nutritionist
Crius Life Sciences Private Limited Mohali.
Ankita Kataria
Assistant Professor
Faculty of Management
Chandigarh Group of Colleges Technical Campus, Jhanjeri, Mohali

Abstract

An infusion is a drink made by placing a flavouring ingredient into a liquid (hot water). Infusions are the most popular method of preparing teas. In the present study, One such infusion was prepared in the form of herbal tea, consisting of orange peel and guava leaves as its main ingredients. After the preparation of herbal tea, organoleptic evaluation was done. The tea was introduced in 5 different batches i.e. 1 gm (A), 2gm (B), 3gm (C), 4gm (D) and 5gm (E) to the semi-trained panels. The results of the organoleptic evaluation, herbal tea infusion (A) was the most acceptable tea got highest scores among the all samples and liked extremely by the semi trained panel members on 9 point hedonic scale. The developed herbal tea infusion is rich in Phenol, Flavonoid, Antioxidants and tannin contents when compared to commercial tea infusions. So, developed herbal tea may prove very beneficial for health and help to reduce the symptoms of many diseases like- constipation, diabetes etc.

Introduction

A beverage is any liquid that people consume to quench their thirst and isn't water. Numerous beverages are drank daily all around the world, however they can be divided into two categories. Alcoholic and non-alcoholic are the two categories (Robert, 2008). A drink that contains ethanol that is made by fermenting grains, fruits, barley, etc. is referred to as an alcoholic beverage. Wine, whiskey, beer, and other examples are typical ones. Non-alcoholic beverages are drinks that don't contain alcohol that people drink for flavour and health reasons. For example, tea, coffee etc. Tea is a flavorful beverage prepared from camellia sinensis leaves. Black tea, green tea, herbal tea, oolong tea, and more varieties are some of its popular varieties in India. These drinks are also referred to as "infusions." (Kumar et al., 2013).

An infusion is a beverage or extract that is created by soaking the leaves of a plant or herb in liquid in order to give it flavour and lengthen its shelf life. Infusions were first primarily used

to preserve food. For instance, fruits and berries could be dipped in alcohol or vinegar and stored that way to prevent them from going bad as quickly (Handa et al., 2008).

One such infusion was made into a herbal tea with the main ingredients being orange peel and guava leaves. These byproducts are known to have a number of positive health effects. Guava leaves promote gut health, lower blood pressure, and aid diabetic patients' blood sugar levels. They also provide potassium, soluble fibre, and other nutrients that are good for the heart and heart health, reduce the signs and symptoms of a painful period (Newman and Cragg, 2007). Orange peels are abundant in bioactive substances including phytophenols, which operate as a non-caloric bulking agent, improve water and oil retention, and have anti-cancer and antioxidant qualities. Additionally, these citrus peels aid in reducing pollution issues brought on by improper residue disposal (Ghosh, and Laddha, 2005).

Methods and materials

1- Purchase of raw materials

Oranges were purchased from the local market and fresh, green and middle-sized leaves of Psidium guajava (guava) were collected from a nursery at Chandigarh.

2- Development of infusion tea

Oranges and fresh guava leaves were washed under running water to get rid of any foreign stuff. The greens were then steamed for three minutes at 90°C. These were then spread out on aluminium trays in a cabinet dryer and dried for six hours at 60 degrees. Oranges were dried in a similar manner for 24 hours at 60°C. Oranges were then peeled, and the peels were ground into a fine powder in a blender. Guava leaves were also blended into a powder. To ensure that the particle sizes were uniform, the powdered mixes were run through an aluminium sieve. Guava leaves powder made up 75% of the plant material that was combined, and orange peel powder made up 25%. Lastly, the developed tea blends were packed in the tea bags using unbleached filter papers with different amounts such as 1g, 2g, 3g, 4g and 5g. These blends were then subjected to organoleptic evaluation tests. After the evaluation, the appropriate quantity to be packed was known.

3-Organoleptic evaluation

A panel of 15 people who were trained in organoleptic evaluation evaluated the produced herbal tea infusions. At the time of tasting, the tea samples ranged in temperature from 60° to 70°. The organoleptic evaluation sessions were held in good temperature, humidity, and lighting conditions an hour before lunch. The panelists were asked to give an overall score on the basis of color, appearance, flavor, texture, taste and overall acceptability of the herbal tea infusions on a scale of 9 point hedonic scale.

Performa for Organoleptic Evaluation

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9 Point Hedonic Rating Test

Name: **Date:**

Product name:

1.   Dislike extremely

2.   Dislike Very much

3.   Dislike moderately

4.   Dislike slightly

5.   Neither like nor dislike

6.   Like slightly

7.   Like moderately

8.   Like very much

9.   Like extremely

Attributes	S	A	B	C	D
Color					
Appearance					
Flavor					

Texture					
Taste					
Over all acceptability					

Suggestions, if any ………..	**Signature**

4-Statistical Analysis

The data were processed for the analysis of mean and standard deviation by Microsoft office excel.

Results and Discussion

Organoleptic analysis results show (table no. 3.1) that the mean scores of the herbal tea infusion (A) was in the ranges of liked extremely to liked very much in all attributes i.e. color, appearance, flavor, texture, taste and overall acceptability (9.30±0.67-8.40±0.69). The results of herbal tea infusion (B) were liked very much to liked moderately in attributes like appearance, flavor, texture, taste and overall acceptability (8.60±1.5-7.70±1.67). The results of herbal tea infusion (C) were liked very much to liked slightly in attributes like appearance, flavor, texture, taste and overall acceptability (8.70±1.25-6.70±1.25). The results of herbal tea infusion (D) were liked moderately to liked slightly in attributes like appearance, flavor, texture, taste and overall acceptability (7.60±1.26-6.00±1.81). The results of herbal tea infusion (E) was liked moderately to neither liked nor dislike in attributes like appearance, flavor, texture, taste and overall acceptability (7.70±0.67-5.00±0.66). Therefore it can be seen from the results of the mean scores of the organoleptic evaluation that herbal tea infusion (A) was the most acceptable tea got highest scores among the all samples and liked extremely by the semi trained panel members on 9 point hedonic scale.

Table 3.1 Mean sensory scores of Herbal Tea Infusion

ATTRIBUTES	1 gm (A)	2 gm (B)	3 gm (C)	4gm (D)	5gm (E)
Color	9.20±1.03	8.10±0.87	8.40±0.69	7.10±0.73	7.10±0.87
Appearance	8.40±0.69	8.30±0.82	6.50±1.71	7.60±1.26	7.30±0.82
Flavor	9.30±0.67	8.00±0.66	7.90±0.73	7.50±0.97	5.00±0.66
Texture	8.80±0.70	8.60±1.50	8.70±1.25	7.50±1.50	7.60±1.50

Taste	9.30±0.67	7.70±0.67	6.70±1.25	6.00±0.81	7.70±0.67
Overall Acceptability	9.20±0.82	8.20±0.63	7.30±0.82	7.30±0.67	6.20±0.63

Values represents as Mean±SD

Conclusion

Guava leaves and orange peel can be combined to create a useful herbal tea. The panellists generally approved of the created herbal tea. When compared to commercial tea infusions, the created herbal tea infusion is high in tannin, phenol, flavonoid, and antioxidant content. The antimicrobial properties of herbal tea are efficient against a wide variety of microorganisms, and regular consumption of guava-based tea will guarantee that a person's health is maintained. Guava leaves are full of bioactive substances that can be utilised to treat a variety of lifestyle diseases, such as diabetes and obesity. Even though guava leaves are rich in bioactive chemicals, the general populace does not consume any. So it may prove advantageous for leading a healthy lifestyle.

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