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Development and Organoleptic Evaluation of Jamun Juice

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Abstract: ***The present study was to formulate the jamun juice by incorporation of different level of jamun puree. The Organoleptic properties of the formulated juice like color, appearance, flavor, viscosity, taste and over all acceptability were evaluated. Among the different dilutions 75g of jamun puree dilution were recorded the highest scores for overall acceptability.***

Keywords: Jamun pure, vitamin-C.

1. Introduction

Jamun (Syzygium Cumini) is always appreciated for the color, flavor and taste of its fruit. It is very large tropical tree that belongs to Myrtaceae family and known by synonyms jambolan or black plum. In India, the jamun tree and its fruit are known variously as Jamun, Jambul, Jaamoon, Jambul [1]. Worldwide, it is known by some other names like, Java Plum, Black Plum, Indian blackberry, Portuguese Plum, Jambolan Plum etc. The jamun tree is native to India and its bordering countries like Nepal, Pakistan, Bangladesh Sri Lanka and even Indonesia. The tree grows equally well in both the tropical and the sub tropical regions.

Thereafter, with the onset of monsoon in June it starts bearing fruit. The flowers are white and have a sweet fragrance. Jambul fruits resemble oblong or ovoid in shape. They have a single seed and a soft dark purple colored almost black skin and a lighter purple flesh [2]. When eaten, the fruits coat the mouth and the tongue a deep purple color that stays for a few hours. The fruit is sweet and tart and leaves a slight astringent action in the mouth.

All the parts of the jamun tree find a wide variety of uses. Jams, jellies, squashes, preserves, vinegar, beverages, pickles and wine are made from the jamun fruits [3].

The ripe Jambul fruit contains Glucose and Fructose was the major forms of sugar. It also contains Vitamins C & A, riboflavin, nicotinic acid, choline, folic acid, malaic acid, sodium, potassium, calcium, phosphorus, manganese, zinc and iron [4].

Anthocyanins are present in appreciable quantities and are the reason for the antioxidant activity of the fruit. Jamun is used to treat diabetes by several traditional practitioners. Scientifically, it has a low glycemic index, making it a good option for diabetics. Anti-diabetic effects of jamun, suggesting that it holds significant potential to produce safer drugs for diabetes treatment another study showed that jamun seeds could lower blood sugar levels by 30% [5]. The fruit is associated with lowered risk of secondary complications of diabetes. The real benefit is at the stage of IFG (Impaired fasting glucose) which can be well-controlled with Jamun, Regulation of IFG prevents the early onset of diabetes and further conditions [6].

It is a good source of mineral salts. calcium 15 mg, potassium 55 mg, magnesium 35 mg, phosphorus 15 mg, sodium 26.2 mg/100 g fruit and vitamin C 18 mg/100 g of fruit. It provides 62 Kcal energy per 100 g of edible fruit. It contains good amount of carotene (48 mg/100 g), folic acid (3 mg/100 g) [7]. Jamun fruit, particularly those from Pakistan's Punjab region, help in breast cancer treatments as it seems to inhibit the proliferation of breast cancer cell lines [8].

These could be possibly due to several bioactive Phytochemicals including polyphenols which have the purple pigment called anthocyanin. Studies show that berry fruit consumption may also provide benefits during chemotherapy and radiation. Jamun has adequate amount of iron and vitamin C. The presence of iron in the black plum is good to increase the hemoglobin count. Jamun iron content acts as blood purifying agent. Since, it is the medium of purifying blood; therefore, it is good for skin and beauty. Iron content is beneficial in menses where the woman faces blood loss. People suffering from anemia and jaundice should consume jamun because of its high iron content [9].

2. Materials and Methods

Purple colored jamun were selected for the preparation of the juice. Jamun were initially cleaned and then cut into pieces. The stem part and seeds were discarded. The cut jamuns were pureed in the mixer and mineral water and artificial sweetener were added and stored in a hygienic manner. The treatments for preparation of jamun juice were as follows:

Treatment details

T1 – 25g Jamun puree + 75ml of mineral water
T2 – 50g jamun puree + 50ml of mineral water
T3 – 75g jamun puree + 25ml of mineral water

The formulated jamun juices were prepared with specified amount of jamun puree as mentioned in above treatments. All the ingredients such as mineral water and artificial sweetener were used.

Organoleptic evaluation of jamun juice were carried out by 10 am among the semi-trained panel judges of thirty numbers including the staff and post-graduate nutrition students, Department of Home science, Mother Teresa Women's University, and IGNOU (The Indira Gandhi National Open University), Chennai. The jamun juice was placed for onset evaluation. The specific sensory characteristics of juice viz., viscosity, sourness, clarity, sweetness, consistency with other general characteristics viz., color, aroma, taste, mouth feel and over all acceptability were evaluated using a rating scale. The mean Scores given by thirty judges were used for statistical analysis.

3. Results and Discussion

The Organoleptic properties of juice were evaluated visually, palpatory, gustatory, olfactory, and overall acceptability. The statistical analyses of the data were depicted in the Table I. The overall acceptability and 5 point rating scale score was higher for the 75 % formulation of juice. The data reveals that there were significant differences at the level of 1% significances among 75%.

4. Conclusion

The wide spread popularity of Juice from all age groups makes this product, a good option for selection. It improves vitamin-C and reduces diabetes and cancer. Furthermore it reduces histamine production to prevent or ease allergies and asthma. This formulated juice is convenience food can surely serve as suitable vehicle for improving nutrient intake without compromising its Organoleptic properties. It will indirectly improve the vitamin-C intake of its consumers. The product has excellent market potential since it contain low carbohydrate, high vitamin-C, and sufficient amount of vitamin and mineral content. Considering all these beneficial factors the jamun based other products must be of most concern. New steps must be taken to undergo research about nutritive value of jamun fruit and to introduce it to all community.

Table 1: Results of Statistical Analysis of scores given by panel judges for the vitamin-C rich Jamun Juice.

S.No	*Level of Incorporation*	*Mean* ± S.D	*t-value*	*Level of Significance*
1	25% Jamun Puree	39.4 ± 5.96	10.44	Not Significant
2	50% Jamun Puree	40.5 ± 5.65	10.16	Not Significant
3	75% Jamun Puree	42.46 ± 6.66	1.23	1% Significant

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