



Preparation and Evaluation of Blended Amla (*Emblica officinalis* Gaertn) Beverages

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Freshly harvested fruits of three Amla cultivars viz., Krishna, Chakaiya and Kanchan were evaluated for the average weight of fruit. Krishna showed the highest weight (39 g) followed by Kanchan (31g) and Chakaiya (25g). The total soluble solids (TSS) of the pulp were determined using a hand refractometer. The TSS content ranged from 9% to 14.5%. The moisture content of freshly harvested fruits of three Amla cultivars, Krishna, Chakaiya and Kanchan were determined. The moisture content ranged from 86% to 90%. The ascorbic acid content in the amla fruit pulp ranged from 351mg/100g to 270 mg/100g.

Keywords: Amla; RTS; sugar syrup; cultivars.

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1. INTRODUCTION

Indian gooseberry, also known as amla, has been considered as a miracle fruit in Indian medicine (Ayurveda). According to two main classic texts on Ayurveda, CharakSamhita and Sushrut Samhita, amla is regarded as “the best among rejuvenative herbs,” “useful in relieving cough and skin disease,” and “the best among the sour fruits” [1-3]. Amla is highly nutritious and is one of the richest sources of vitamin-C, amino acids and minerals [4,5]. It contains several chemical constituents like tannins, alkaloids and phenols. Among all hydrolysable tannins, Emblicanin A and B; gallic acid, ellagic acid are reported to possess biological activity [6,7,8]. “It plays a major role in herbal medicine to treat or cure many diseases because of its nutraceutical properties. India is the largest producer in the world of amla. It is commercially cultivated in the Uttar Pradesh, Maharashtra, Gujarat, and Rajasthan states of India. Many of the traditional products prepared from amla include squash, preserves, syrups, jams, candy, shreds, sauces, and juice. Except for amla juice, other products produced from amla are rich in calories. With rising health consciousness among consumers, amla juice is gaining importance. Unlike other fruit juices, amla juice is not used as conventional fruit drink. Consumers do not relish this fruit juice in a large quantity because of its highly acidic and astringent nature and is consequently used for medicinal purposes only” [1]. In India, a number of large companies as well as small-scale industries involved in amla processing are manufacturing amla juice for national and international markets. Amla Juice In India: Amla, often known as Indian gooseberry, is a nutrient powerhouse. Amla juice benefits skin, hair, and health. The important minerals and vitamins present in this best Amla juice are also crucial for avoiding and treating some of the most prevalent and common ailments. The benefits of Amla juice is also known for weight loss.

2. METHODS

The recipe for preparation of blended amla squash was standardized by using different proportions of blend at a fixed level of 22% pulp and 45°B TSS. The products was evaluated on the basis of chemical and sensory quality.

The RTS drink was prepared by using amla pulp at 8%, 10.0, 12.0 and 15.0 % levels with or without addition of mixed fruit flavour (0.02%) at a constant total soluble solids (TSS) of 15 °B raised by using cane sugar syrup. The concentration of 15 °B TSS was found optimum on the basis of preliminary screening.

3. RESULTS AND DISCUSSION

Blended amla squash: Addition of pulp to the beverage up to 35% with either of TSS 40 or 45 °B did not cause adverse effect on its colour Table 1. However, addition of pulp beyond this level made the product unacceptable for both body and colour characteristics. While, the squash made by using 25% pulp with TSS of 45°B exhibited the maximum liking due to its inherent characteristics, the amla pulp did not impart any appreciable flavour to the beverage in all combinations. However, acidic character of amla pulp did not cause significant effect on the taste of the beverage. The squash with 25%pulp and TSS of 45 °B was liked the most (8.0) while the product with 40% pulp and TSS of 40 °B was least preferred (3.0) for taste attribute. Similarly, on the basis of overall acceptability, the amla squash prepared by using 25% pulp and TSS of 45 °B was adjudged the best.

Ready-to-serve (RTS) drink: Data in Table 2 revealed that the RTS beverage with 10% pulp and TSS15°B received maximum sensory scores with respect to various quality characteristics. The higher sensory score for the colour was attained by a RTS drink that contained 10% pulp

Table 1. Sensory quality of amla squash

Pulp (%)	TSS°B	P ^H	Colour	Flavour	Body	Taste	OA
25	40	2.9	6.0	6.7	7.0	6.0	6.0
25	45	2.9	7.0	7.0	7.0	8.0	8.0
30	40	2.8	6.0	6.0	6.0	6.0	6.0
30	45	2.8	7.0	6.0	6.0	6.0	6.0
35	40	2.7	6.0	6.0	6.0	4.0	4.0
35	45	2.7	6.0	6.0	6.0	5.0	5.0
40	40	2.6	5.0	5.0	5.0	3.0	4.0
40	45	2.6	6.0	5.0	5.0	4.0	4.0

*Based on 9 – Point Hedonic scale, OA: Overall acceptability

Table 2. Sensory quality of ready –to – serve drink from amla Pulp

Pulp%	P ^H	Colour	Flavour	Body	Taste	OA
8.0	2.9	7.0	6.0	7.0	6.0	6.0
10.0	2.8	7.0	6.0	7.0	7.0	7.0
12.0	2.7	6.0	5.0	6.0	6.0	6.0
15.0	2.6	6.0	5.0	6.0	5.0	5.0

*Based on 9 - Point Hedonic scale, OA: Overall acceptability

followed by 8.0% fruit pulp further, the combination having 10 or 8% pulp with TSS of 15°B were rated high over other beverages (12.0 or 15% pulp) with respect to their flavour attribute. With the increase in the pulp proportion in the drinks, there was a corresponding increase in the sensory score for body of the beverage however, the beverage with 10.0% fruit pulp was rated the most appropriate.

4. CONCLUSION

Amla has been renowned for its therapeutic properties since ancient times in India and is regarded as a miracle fruit for health-conscious individuals. Unfortunately, although being a good source of ascorbic acid, it is more commonly utilized for therapeutic purposes than as part of a daily diet. The fruits are less utilized for fresh consumption and generally used after processing because of high astringency and acidity. However, the loss of nutritional value in processed products, including juice, is very high due to thermal treatment– based processing. However, demand for amla juice is projected to increase in the future as the international community becomes more aware of its health benefits. To benefit the worldwide consumer, juice-based goods utilizing nonthermal processing procedures are required for the best preserved amla characteristics as well as a globally acceptable taste.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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