

Development of a value added Amla product

Suman Devi^{*1}, Ena Gupta², Neelesh Kumar Maurya³

1. Department of Food Science and Nutrition, C.S.A. University of Agriculture and Technology, Kanpur, Uttar Pradesh, India

2. Department of Home Science, University of Allahabad, Allahabad-211002, Uttar Pradesh, India

3. Department of Home Science, Bundelkhand University, Jhansi, Uttar Pradesh, India

*Corresponding author: Dr. Suman Devi

Mail Id: sumanmaurya23@gmail.com

ABSTRACT

Emblica officinalis commonly known as Indian gooseberry or Amla, is perhaps the most important medicinal plant in the Indian traditional system of medicine, the Ayurveda. Vitamin C, tannins and flavonoids present in amla have powerful antioxidant activities. Due to rich Vitamin C content, amla is successfully used in the treatment of diabetes mellitus. It is one of the oldest Indian fruits and considered as “wonder fruit for health”. Amla pulp of fresh fruit contains 200–900 mg/100 g of vitamin C. Ascorbic acid retention was found to be decreased with increase in temperature. The fruit is highly perishable in nature and is available for short period from October to January. The amla fruit possess excellent nutritive and therapeutic value. Processed forms of Amla fruit are murabbas, candy, dried chips, jelly, sauce, pickle, squash and syrup. Therefore, present study was undertaken to develop a value added amla products. Amlabhujia was prepared from gram flour, amla pulp or amla powder with spices. Amla was incorporated at different forms (powder and pulp). Amlabhujia was prepared by using nine point hedonic scale. The Comparison of three samples B₁ (Gram flour with amla pulp), B₂ (Gram flour, amla powder, spices, oil with citric acid) and B₃ (Gram flour, amla powder, without citric acid). The result of study revealed that according to sensory evaluation of amlabhujia, sample B₁ (gram flour with amla pulp) was found to be highly acceptable by the judges.

Keywords: Amla, Medicinal uses, Diseases, Vitamin C, Sensory evaluation

Received 20.04.2019

Revised 28.05.2019

Accepted 05.07.2019

CITATION OF THIS ARTICLE

Suman Devi, Ena Gupta, Neelesh Kumar Maurya. Development of a value added Amla product. Int. Arch. App. Sci. Technol; Vol 11 [2] June 2020: 90-93

INTRODUCTION

Amla, or Indian gooseberry (*Emblica officinalis*) is an indigenous fruit of the Indian subcontinent. It is one of the oldest Indian fruits and considered as “wonder fruit for health” because of its unique qualities (Shekhawat et al., 2014). It is a small sized, minor sub-tropical fruit and grows widely along the hillsides and sub mountainous areas of North India. A fully grown amla tree with good bearing habit yields from 187 to 299 kg fruit per year. The Fruits of Amla are widely used as major constituents in several ayurvedic preparations such as chyavanprash and rasayana which promotes health and longevity [7]. Amla is one of the richest sources of ascorbic acid (500–1,500 mg/100 g) and used as a strong rejuvenator herb in Indian pharmacopoeia [3]. Amla has a beneficial effect in decreasing the cholesterol content of blood (1). It is also used for treating chronic dysentery, bronchitis, diabetes, cancer, fever, diarrhea, jaundice, dyspepsia and coughs etc [8,10]. The Ascorbic acid content of fresh Amla fruit ranges upto 950 mg/ 100 g which is said to be highest among all fruits next to Barbados cherry [9]. Whereas dried amla product is significantly affected by two drying methods, higher ascorbic acid content in the product

was obtained (285.2 mg/ 100g) with solar drying. It is a rich source of vitamin C, antioxidants, poly phenols, tannins, minerals and known for its therapeutic value [2,5]. Products packed in glass jar, product can be stored under ambient temperature, the product is microbiologically stable and product can be consumed as jam for bread spread. Amla fruit are not popular as table fruit because of its astringent taste. However, excellent nutritive and therapeutic values of the fruit have great potentiality for processing into several quality products. Amla is highly perishable in nature so processing is required to increase the shelf-life and value addition, particularly during glut period [4]. The objective of the present research entitled "Development of value added amla products" was carried out to prepare the value added amla products and to assess the sensory evaluation of the products.

MATERIAL AND METHODS

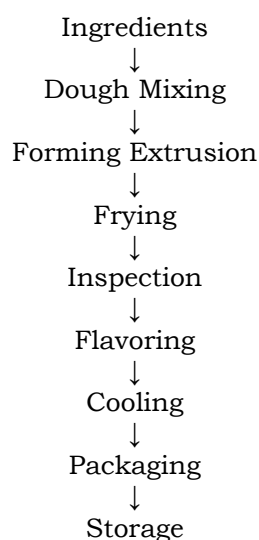
Preparation of Amlabhujia

Several trials were taken with different preparation of Amla powder, gram flour, oil and salt. Finally three samples were selected for the evaluation.

Methodology

This heading deals with the description of research procedure and techniques used in literature reviewed. The investigation entitled "Development of value added amla products" were carried out in the Department of Food Science and Technology, Centre of Food Technology University of Allahabad, Allahabad, U.P. India.

Flow Diagram of preparation of Amlabhujia



Procurement of raw materials

Raw materials i.e. amla was purchased from the Local market of Allahabad. Amla fruits with long stalks in clusters were sorted for uniform size, optimum maturity and fruit color. Other ingredients used in the preparation of bhujhia includes fresh and dry gram flour, spices, condiments, packets of amla powder and packing materials etc. which were collected from local market in Allahabad, U.P state.

Sensory evaluation

All the products prepared were subjected to sensory evaluation with respect to color, appearance, aroma, texture, taste and overall acceptability by a trained panel comprising of 10 judges using the 9- Hedonic Rating scale. Statistically analyzing the data obtained during this investigation, the methods to determine the significance of the difference between means of scores were followed as suggested by Henry Garrett.

RESULTS AND DISCUSSION

The results obtained during this investigation of sensory quality of final product presented in Table 1. Three selected samples B₁ is the amlabhujia was prepared with amla pulp, B₂ is

the sample with higher concentration of citric acid and B₃ is the sample with amla powder. Amlabhujia prepared by amla pulp with a pinch of citric acid (2.5gm of citric acid). The data on colour, appearance, flavor, texture as well as overall acceptability was determined by sensory evaluation card. Sensory evaluation by judges observe colour, appearance, flavor, texture of sample 1 and 3 are concerned, there was a significant difference between the mean of these parameters using 9 point Hedonic scale. Appearance was affected by colour and Taste was found little bitterness in amla powder [6].

As results indicate that no significant difference in the colour, appearance and texture of the standard sample and sample with higher citric acid. Due to significant difference in the flour of two, the standard sample with less citric acid concentration scored much higher in terms of overall acceptability. Standard sample made with Amlapulp (Sample No.1) and other Sample made with Amla powder (Sample No.2) comparison in term of colour, flavor, and overall acceptability of product. Standard Sample score much higher than other Sample. Hence, in terms of overall acceptability sample No.2 and Sample No.3 scored much lower as compared to the standard sample (Sample No.1).

Table.1

Sample	Colour	Appearance	Flavour	Texture/Consistency	Overall acceptability
Mean of Sample 1	6.92	7.25	7.25	7.08	7.83
Mean of Sample 2	8.00	7.33	3.17	6,5	3.17
Mean of Sample 3	2.92	3.42	3.83	6.33	3.08

CONCLUSION

This present study it is concluded that due to high nutritional and medicinal value of amla. It is used for preparation of some new ready to eat product like Amlabhujia. Three test samples were selected for the sensory evaluation by judges using a 9 point Hedonic scale. Test analysis of variance (ANOVA) were used to analyze the data and sample were analyzed several times. Hence several trials were done to make the objective successful finally three samples were selected. On the basis of sensory evaluation then we are selected a final products.

CONFLICT OF INTEREST

The author(s) declare(s) that there is no conflict of interest.

REFERENCES

1. Akhtar MS, et al., (2011). Effect of Amla fruit (*Emblica officinalis* Gaertn.) on blood glucose and lipid profile of normal subjects and type 2 diabetic patients. *International journal of Food Science Nutrition Sep*; 62(6):609-16.
2. Jain S K and Khurdia D S.(2002). Studies on juice extraction of aonla (*Emblica officinalis*. Gaertn.) cv. Chakaiya *Journal of food Science and Technology*; 39: 515-516.
3. Pathak R and Ram RA (2007). Organic production of aonla. In: National seminar on "Recent advances in production, protection and post-harvest management of grape mandarin and arid fruits. College of Horticulture, Mandsaur. Pp.133-136, March 17-18.
4. Prajapathi et al., (2011). Effect of pretreatment and drying methods on quality of value-added dried aonla (*Emblica officinalis* Gaertn) shreds. *Journal of Food Science and Technology-Mysore* 48(1): 45-52.
5. Pragati, Dahiya S, Dhawan S S.(2003). Effect of drying methods on nutritional composition of dehydrated aonla fruits (*Emblica officinalis* Gaertn.) during storage. *Plant Foods for Human Nutrition*.58:1- 7.
6. Ranganna S.(1986). Hand book of Analysis and Quality Control for Fruit and Vegetable products, 2nd edn. Tata McGraw Publ Co. Ltd, New Delhi
7. Rajkumar NV, M, Kuttan R, (2001). *Emblica officinalis*. Fruits afford protection against experimental gastric ulcers in rats. *Pharma. Biol.* 39: 375-380.
8. Sangeeta; NK, Maurya (2019); Nutrients In Diet that Effective in Cancer Prevention: *International Journal of Pharmacogenosy and Phytochemistry* 8 (2):2296-2304

9. Seema Shekhawat, N. S. Rathore and R. A. Kaushik (2014). Advances in processing and product development of aonla (*Emblica officinalis*) in indian context- A review International Journal of Food And Nutritional Sciences,3(6):242-247.
10. Shankar, G.,(1969) Aonla for your daily requirement of vitamin C.Ind.Hortic.:13:9-15.