



VALUE ADDED AONLA PRODUCTS

Introduction

Aonla or amla (*Embllica officinalis*), popularly known as the Indian gooseberry, is a small sized, minor subtropical fruit and grows widely along the hillsides and submountainous areas of North India. The fruit is acrid, cooling, refrigerant, diuretic and laxative, hence used for treating chronic dysentery, bronchitis, diabetes, fever, diarrhoea, jaundice, dyspepsia, & coughs etc. It is highly nutritive and one of the richest source of ascorbic acid. It contains 500-1500 mg of ascorbic acid per 100g of pulp. The gallic acid present in aonla fruit has antioxidant properties. This fruit is extensively used in the preparation of Ayurvedic and Unani medicines. Owing to its nutritive and miraculous medicinal properties, this fruit has acquired wide popularity.

The fresh fruits are generally not consumed due to their high astringency but it has got great potential in processed forms. Hence attention has been focused on the preparation of different value added products from aonla. Aonla preserve is an extremely popular traditional product, which is also known as amla murabba in India. Aonla preserve has the beneficial effect of purifying blood. This also helps in reducing the cholesterol levels in blood and in improving eyesight. Lack of scientific approach in its preparation and preservation renders this valuable product vulnerable to spoilage in a short period of time after its preparation.



Figure 1: The aonla

Traditional method and concerned problems

For the preparation of aonla preserve the fruit are washed, dipped in brine solution for a couple of days until the colour of the fruits changes from green to a yellowish or creamish colour, pricked after washing and blanched. Then the fruit are put in sugar syrup of 45-50 °Brix strength. The following day the syrup is highly concentrated; fruit are added to it without knowing the final concentration of sugar in the covering syrup, which determines the shelf life of product.

Tough texture, shrinkage or gaseous fermentation during storage are commonly encountered troubles that pose a big problem in stabilising the shelf life and commercialisation of this product.

Recommended method and storage study results

Scientists at the Punjab Agricultural University studied the scientific approach to enhancing the shelf life of aonla preserve to improve its commercial production. As quite a few excellent

plantations of aonla fruits are coming up, screening for suitable varieties for preserve making is being carried out.

Improved method includes; washing and selected bold fruit are dipped in 2% common salt solution until the green fruit changes to a creamish colour, with replacement of the brine solution on alternate days. The fruit are thoroughly washed, pricked with a stainless steel pricker and then blanched in boiling water for 4 to 5 minutes. Sugar equal to the weight of fruits is sprinkled over the fruit and kept overnight. The next day one boiling is given to the whole mass and syrup is then drained out. The syrup is thoroughly boiled and concentrated by adding more sugar to 54-55°Brix strength and mixed with fruit. The following day the fruit are taken out and syrup is concentrated to 75°Brix by adding sugar and boiling. Aonla fruit are added back and allowed to stand in syrup for couple of days. When the °Brix of the syrup stabilises at around 70°, the preserve is packed in clean, sterilised, dry glass jars and stored at ambient room temperature away from direct sunlight.

The prepared preserve was analysed for physico-chemical composition to find out its storage behaviour for 6 months and it was found that there was reduced losses in all physico-chemical and organoleptic attributes as presented in the table.

Table

Character	Aonla fruit	Aonla preserve
°Brix	9.26	71.0
PH	3.2	3.6
Acidity (% citric acid)	2.16	0.09
Ascorbic acid (mg/100g)	526.8	95.4
Reducing sugars (% dextrose)	2.63	43.30
Total sugars (% dextrose)	3.42	62.11
Protein (% N ₂ X 6.25)	0.71	0.75
Pectin (calcium pectate)	0.52	0.13
Tannins	0.87	0.68

Aonla Candy - Fruit candies are becoming more and more popular because of high acceptability, minimum volume, higher nutritionally value and longer storage life. These have additional advantage of being least thirst provoking and ready to eat snacks.

For the preparation of aonla candy, mature fruit are washed, pricked and dipped in 2 percent salt solution for 24 hours. Then fruits are washed and dipped in 2% alum solution for 24 hours. The fruit are thoroughly washed and blanched in boiling water for 5 minutes and steeped in 50° Brix syrup solution for 24 hours. The next day steeping is done in 60° Brix for 24 hours. Again steeping is done in 70° Brix for 72 hours. Excess syrup is drained. The fruit are dried to 15% moisture content and coated with powdered sugar/pectin. Packaging is done in polythene pouches (400 gauge).

Jam - Aonla fruit pulp (50%) is taken and 67% sugar is added. Herbs like 5% asparagus and 2% ashwagandha extract will increase its medicinal properties. The mixture is cooked and citric acid is added (acidity 1.2%). After judging the end point (68° Brix), it is filled into clean sterilised glass jars, upon setting of jam, lids and jars are closed ensuring an air tight seal.

Sauce - Five kg of sauce containing 50% aonla pulp and 50% tomato pulp with 75g sugar, 10g salt, 60g onion, 6g garlic, 12g ginger, 5g red chillies, 12g hot spices was prepared. Acetic acid and sodium benzoate as preservatives were added at the rate of 1ml and 0.3g/kg of final product, respectively. Finally the sauce was filled in glass bottles and crown corked followed by processing in boiling water for 30 minutes. and air-cooled. The product was highly acceptable even after the storage period of more than 9 months.

By using these simple scientific techniques, judicious processing of aonla fruit will not only open new dimensions for establishing commercial processing industries in the form of value added products but will also provide health benefits to the consumers.

References and further reading

Jams, Jellies and Marmalades Practical Action Technical Brief

Packaging Food in Glass Practical Action Technical Brief

Packaging Materials Practical Action Technical Brief

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