

Studies on the storage behaviour of amla jam

A. HARSHAVARDHAN REDDY* AND V. CHIKKASUBBANNA

Division of Horticulture, University of Agricultural Sciences, GKVK, BANGALORE (KARNATAKA) INDIA

ABSTRACT

Amla jam with 45 and 50 per cent pulp, 68 and 70°Brix T.S.S was prepared and subjected to physico-chemical analysis at 0, 30, 60 and 90 days of storage and organoleptic rating at 90 days of storage. An increasing trend in pH, total soluble solids and total sugars, reducing sugars and decreasing trend in acidity, crude protein, fibre, tannins, non-reducing sugars and ascorbic acid was noticed during storage period of 90 days. Jam prepared with 45 per cent pulp, 70°B total soluble solids and 1 per cent acidity was found to be the best recipe for organoleptic qualities like appearance, aroma and flavour, taste and overall acceptability.

Key words : Brix, Amla, Crude protein, Total soluble solids.

INTRODUCTION

The amla ('Aonla') (*Phyllanthus emblica* or *Emblia officinalis* Gaertn), also known as Indian Gooseberry is a minor sub-tropical deciduous tree belonging to the family Euphorbiaceae. It is said to be native of tropical Asia and found growing wild in tropical forests of India as well as on the hill slopes up to an elevation of 1300 m from mean sea level. It is a hardy plant which grows without much care and thus an ideal tree for dry regions.

The fruits are light green at first, but when they mature become dull greenish yellow. Fruits have nearly spherical and globular shape, smooth surface with six obscure vertical furrows (Tewari *et al.*, 2001).

Amla is used for various ailments in the Indian system of medicine. It possesses pronounced expectorant, antiviral, cardiogenic, hypoglycemic and antioxidant activities (Kalra, 1988).

Amla has been highly extolled for its medicinal and nutritional properties. Fruits during their peak harvesting season go as a waste due to limited usage. Therefore, development of value added products could find national and international markets and have great importance in alleviating malnutrition among rural population in addition to several health benefits.

Hence, it is proposed to standardize recipes for development of commonly used products such as jam. This would result in emerging suitable technology for utilization by the processing industries.

MATERIALS AND METHODS

The amla fruits were collected from forest localities of Karnataka. Well matured fruits of uniform size and free from bruises were used for the experiment. Selected fruits were washed thoroughly with clean water and boiled for five minutes with equal amount of water for easy

separation of seed and pulp (Singh and Kumar, 1995). The pulp is then fed into a warring blender for mashing into fine texture using the same boiled water. Thus, extracted pulp was used for preparation of jam with the following ingredients.

Recipes for jam:

Recipe No.	Pulp (%)	TSS(°B)	Acidity (%)
1	45	68	1.0
2.	45	70	1.0
3.	50	68	1.1
4.	50	70	1.1

The prepared jam was analyzed for physico-chemical characteristics and assessed for its acceptability by organoleptic evaluation at 90 days of storage.

The pH was measured using Toshniwal digital pH meter (Model DI 707). Total soluble solids content was recorded using Erma-hand refractometer. Titrable acidity as citric acid and ascorbic acid were estimated by methods suggested by Ranganna (1977). Total and reducing sugars were estimated by Shaffer-Somogyi method (Somogyi, 1945). Crude protein was calculated by multiplying per cent nitrogen content with the factor 6.25. Per cent nitrogen content was determined by Micro-Kjeldhal method described by (AOAC, 1970). Crude fibre was expressed as grams per 100 g of sample (AOAC, 1970). Tannin content was calculated by comparing the absorbance to that of standard curve (Ranganna, 1977).

Amla jam was evaluated at 90 days of storage for sensory attributes such as appearance, aroma and flavour, taste and overall acceptability by a panel of 10 judges by following numerical scoring method (Amerine *et al.*, 1965).

In this experiment, factorial completely randomized design (FCRD) was adopted. Observations on various