

Studies on the storage behaviour of amla syrup

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ABSTRACT

Amla syrup with 25 and 30 per cent pulp, 65 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. Syrup prepared with 25 per cent pulp, 70°B total soluble solids was found to be the best recipe for organoleptic qualities like appearance, aroma and flavour, taste and overall acceptability.

Key words : Storage behaviour, Amla syrup

The Amla ('Aonla') (*Phyllanthus emblica* or *Emblica officinalis* Gaertn), also known as Indian Gooseberry is a minor sub-tropical deciduous tree belonging to the family Euphorbiaceae. It is a hardy plant which grows without much care and thus an ideal tree for dry regions.

Amla has been highly extolled for its medicinal and nutritional properties. It possesses pronounced expectorant, antiviral, cardiogenic, hypoglycemic and antioxidant activities (Kalra, 1988). Amla fruit contains 89 to 94% pulp, 0.8 to 2% fibre, 10 to 14% total soluble solids, 1.4 to 2.4% acidity, 700 to 900 mg vitamin C/100g pulp, 2.4 to 3.1% pectin and 2 to 3% phenols (Singh *et al.*, 1993).

Fruit of amla is not consumed in fresh form because of its astringency and 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 develop value added syrup from amla fruit. 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 syrup with the following ingredients.

Recipes for syrup

Recipe No.	Pulp (%)	TSS(°B)	Acidity (%)
1.	25	65	1.3
2.	25	70	1.3
3.	30	65	1.3
4.	30	70	1.3

The prepared syrup 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 (A.O.A.C., 1970). Crude fibre was expressed as grams per 100 g of sample (A.O.A.C., 1970). Tannin content was calculated by comparing the absorbance to that of standard curve (Ranganna, 1977).

Amla syrup 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