

# **PROCESSING OF GUAVA**

Value addition favours the availability of guava beyond the seasons, geographic areas and provides consumers with innovative and convenient products. Guava is very popular as a fresh fruit because of its excellent taste, high vitamin content and 100% edibility. This fruit is equally important for the processing industry. Several advanced technologies have been developed in guava for value addition and there is immense scope for diversified value-added products of guava. Due to presence of rich amount of pectin, a high-quality natural jelly is obtained from guava. Processed guava pulp is an excellent raw material for preparation of various other guava products. Guava juice, blended RTS beverages, Guava wine, Guava powder, jam, toffee. Cheese, ice cream topping, nectar are some important products of guava.

## **GUAVA PROCESSING AND PROCESSED PRODUCTS OF GUAVA**

### **1. GUAVA PULP**

The guava fruits are highly perishable in nature and cannot be stored for more than a week in winter and 23 days in rainy season. Guava fruits can be processed and preserved in the form of pulps which can be converted into juice, ready-to-serve beverages, nectar *etc.* During off-season, Bottled guava pulp of cv. Allahabad Safeda and Banarasi Surkha stored at room temperature with 2000 ppm potassium metabisulphite (KMS) retained its highly acceptable quality up to 6 months after which it can be utilized for the preparation of ready-to serve drink and guava leather.

The pulp is extracted from guava fruits by blending the cut pieces of fruits with water (up to 20 %) and filtering out the seeds. The pulp is heated to 75-78°C and stored with 1000 ppm S02 in airtight containers aseptically packaged. Guava

pulp of good quality can be preserved with potassium metabisulphite and stored in food grade plastic jars at low temperature (2-5°C) for 3 months. Guava pulp is used for ethanol production.

**Ripe fruit → washing of fruits → cut into pieces → mix with water (1:1) → passing through pulper → pulp**

## **2. GUAVA JUICE**

Juice may be obtained either from fresh guava fruits or stored pulp. Juice from fresh fruit is extracted by squeezing guava pieces through a hydraulic filter press. Juice could be made from pulp by diluting it with water and filtration. The colloidal particles which cause turbidity in the juices carry flavour substances and natural antioxidants. The fruits also have a large content of carotenoids which are retained in the structural tissue during pressing. The use of pectic enzymes in association with fining agents Yield of cloudy juice is significantly affected by the temperature and time used for enzyme treatments. Increasing exposure time elevates yield but also causes a reduction in ascorbic acid content of the juice due to oxidation

For clarifying guava juice (600 ppm of pectic enzyme; 45°C during 120 min in association with fining agents: silica sol and gelatin) showed good results with juice yield of 84.70%. The product showed good stability in regard to the chemical and physico-chemical changes during processing that could affect nutritional and organoleptic characteristics. The commercial enzyme Pectinex Ultra SP-L® at 700 ppm with incubation period 1.5 hr and at temperature 50°C was successfully applied to guava puree that resulted in a 51% reduction in viscosity, 13% increase in ascorbic acid content and 18% increase in yield of a clearer juice.

### **3. BLENDED RTS BEVERAGS**

Guava (*Psidium guajava* L.), is a good source of vitamin\_C, has a strong flavour and taste with good nutritional quality but fruit pulp is not attractive in colour. Hence it is used to prepare RTS beverages blending with other fruit pulps like 20% Aonla pulp 30% papaya and dairy products.

Eg: Blending 50% Guava and 50% Barbados cherry pulps with 12% TSS and 0.2% acidity was found to be the best. They also reported that blended RTS was found to be acceptable up to five months of storage at ambient temperature with good appearance, flavour, taste and overall acceptability.

Pink varieties are better suited for beverage preparation, owing to their attractive colour. From 100 kg of red flesh guava, 247 litres of RTS beverage could be obtained.

### **FLOW-SHEET FOR PROCESSING OF RTS BEVERAGES**

**Guava (pulp/juice) → mixing with strained solution (sugar +water +acid, heated just to dissolve) according to recipe → homogenization → bottling → crown corking → pasteurization (90°C+25minuts) → cooling → storage**

### **4. GUAVA NECTAR**

Guava nectar is a juice made from the guava fruit. It is typically made by crushing fresh guava fruits and using the resulting guava pulp to create a rich, sweet juice which has a great deal of flavor. There are a number of uses for guava nectar, ranging from mixed drinks to straight consumption, and the beverage is especially popular in tropical regions. It can be found for sale in many markets, often in pasteurized and shelf-stable forms. Specifications for Guava Nectar are

Brix 12.5° 13 ° Acidity 0.15 %, pH 3.4 – 4. The guava nectar storage at 10°C retained 46% of the content of vitamin C for 120 days.

## **5. TOFFEE**

Pulpy fruits like mango, guava, papaya, fig, jackfruit etc. can be utilized for preparation of toffee. Fruit toffees naturally are very nutritious as they possess most of the constituents of fruit from which they are prepared.

Better quality toffee with fig and guava pulp can be prepared by using 75:25 per cent pulp, 500 g sugar, 50 g skim milk powder, 100 g fat (cow ghee) and 2 g common salt per kg pulp. The storage studies of toffees packed in 200 gauge polyethylene bags indicated that the TSS, reducing and total sugars increased with the advancement of storage period, while moisture and acidity content decreased. Toffee could be stored in good condition beyond 180 days at ambient temperature

## **6. GUAVA WINE**

Guava fruit can also be converted into wine of acceptable quality. Wine from 1:4 dilutions with DAHP was found to be the best treatment and graded as fair however its quality is lower than standard grape wine

## **7. GUAVA POWDER**

Guava powder is obtained by dehydration process which is an efficient alternative for storage of fruit. It may be obtained by pulverizing the dehydrated slices/ pieces after removing the seed core, if any. Guava powder can be used for the preparation of beverages, mild shake, etc. The total ascorbic acid content in guava powder ranged from 459.33 to 1,229 mg/100 g of powder. Guava powder is rich source of phenolic compounds (44.04 mg GAE/g).

There is also potential for use of an instant guava powder in formulated drinks, baby foods and other products. Several methods may be used for

production of guava powder, but the most successful include freeze drying, foam mat drying, spray drying and tunnel drying.

## 8. GUAVA JELLY

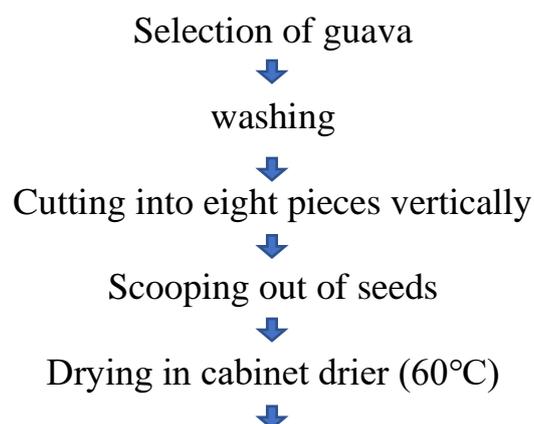
### Ingredients

<b>Guava</b>	<b>1kg</b>
<b>Sugar</b>	<b>600g</b>
<b>Citric acid</b>	<b>8g</b>

### Method

1. Select well matured sound guava fruits, wash well and cut into small slices.
2. To this add equal quantities of water and boil under low flame for 30 minutes.
3. Strain the pectin extracts, add sugar and citric acid.
4. Boil the pectin extract and sugar mixture upto 65°Brix and fill hot into sterilized bottles, cool and store.

## 9. DEHYDRATED GUAVA PIECES



Cooling to room temperature and tempering over night



Packing and storage



Guava jelly



Guava nectar



Guava juice



Guava powder



Dehydrated guava pieces



Guava wine