

# **GUAVA (*PSIDIUM GUAJAVA*, L.)**

## **INTRODUCTION:**

Guava belongs to the family *myrtaceae*, which has more than 80 genera and 3000 species, distributed throughout the tropics and subtropics, mostly in the Americas, Asia and Australia. Species range from tall trees to shrubs and woody creepers

Important genera and species:

There are four genera of interest because of their fruits:

- *Psidium*
- *Eugenia*
- *Syzygium*
- *Feijoa*.

## **ECOLOGY:**

### **Soil**

Guava is adapted to a wide variety of soil types. The crop will thrive on shallow and infertile soils, although growth and production may be low with pH range from 5 to 7.

## **CLIMATE:**

### **Rainfall**

Guava performs best with abundant rainfall but 1000 – 2000 mm rainfall per year is optimal, although it tolerates drought. The ideal rainfall pattern for guava is monsoon .

### **Temperature**

Guava does best in warm areas with abundant moisture and it is cultivated from sea level to elevations exceeding 1500 m, if frost-free. The optimum temperature is between 23°C and 28°C.

**Light**

Light saturation for this C3 plant is high, above  $925 \text{ umol m}^{-2} \text{ s}^{-2}$  photosynthetic photon flux.

**Photoperiod**

Guava has not shown any visible response to photoperiod

**Wind**

Guava trees grafted on seedling rootstocks have tap roots that provide substantial anchorage. However trees from rooted cuttings are subjected to uprooting by strong winds within the first 3 years.

**GENERAL CHARACTERISTICS:****Tree**

Guava is shrub but under high moisture conditions, grows to a height of 6 – 9 m and spread to form a canopy. The trunk diameter is 30 cm or more.

**Flowers**

Flowers are single or in clusters of 2 to 3 at the leaf axils of the current and preceding growth flushes.

**Fruit**

Guava fruit is botanically a many seeded berry, ovoid, elongate or pear-shaped, with size varying from 2.5 to 10 cm in diameter.

**PROPAGATION:****Sexual**

Seed germination is used to generate seedlings for improvement programmes on the crop or to produce rootstocks for grafting of desirable cultivars.

**Asexual**

Polybags-grown seedlings may be budded or grafted when stem diameters are 12 – 20 mm, with higher diameter being especially suitable for budding. Budding is preferred to grafting techniques.

**Site selection:**

Thickly forested sites or sites with regrown forest or a cropped land being converted to guava plot. The site must not be water logged.

**Field layout:**

This is done according the available technology

**Field preparation**

Field preparation follows conventional method. Soil pH is best maintained between 5 and 7.

**Transplanting and Plant Spacing**

Well-grown rooted cuttings (ramets) 6-8 months old can be transplanted into the field after hardening in the direct sun for several weeks. Generally the transplanting spacing is between 4.0 m x 6.0 m and 5.2 m x 7.6 m.

**Irrigation**

Guavas thrive in areas with long dry periods and a wide range of rainfall. Adequate moisture is required during vegetative growth for optimum flowering and fruit development. Drip irrigation is being increasingly used in guava production to replenish the daily water loss. Fertigation is carried out in larger orchards.

**Pruning**

The objective of pruning is to open up the canopy in order to permit more sunlight which leads to more shoot production and increased yield. Pruning begins at the early stage of the plant growth.

**Cycling**

Guava produces varying amount of fruit yield throughout the year in the tropics. Under natural conditions of drought and / or low temperatures followed by irrigation and warm temperatures, there is prolific flowering especially if the trees have shed their leaves.

**Weed control**

Weed control is crucial during the first 2-3 years of orchard establishment. Thereafter, the canopy of the trees provides adequate shade to minimize interference by weeds.

### **Orchard protection**

Windbreaks are essential in a guava orchard meant for orchard markets.

### **Yield**

Fruit yield depends on

- cultivar potential
- planting density
- weather conditions
- all other factors involved in orchard management especially for fruit cycling.

### **Harvesting**

For dessert guavas harvesting is done manually and carefully handled to avoid injury to the fruits.

### **Grading;**

Grading in guava is size-based.

### **Packaging:**

The fruits are packed carefully in cartons for shipment/transportation to markets.

### **Marketing:**

Over-ripped, bruised, infested and infected fruits attract low market premium. They are therefore culled rather than allowing them to fall and become sources of infection/infestation in the orchard especially the fruit flies.

### **Postharvest treatment**

Guava is generally grown for processing, but in areas free from fruit flies or where fruit bagging is practised, low-acid cultivars can be grown for fresh consumption.

**Utilization**

Guava is widely grown throughout the tropics and subtropics and is either consumed fresh or processed. India and Mexico are by far, the largest producers of guava in the world. Guava is an excellent source of ascorbic acid (in the skin), pectin (in the flesh), dietary fiber, vitamin A and Ca.