

**LEC .23 SUBTROPICAL FRUITS - MANGOSTEEN - SOIL, CLIMATE,  
PLANTING, VARIETIES, NUTRIENT AND WATER MANAGEMENT,  
SPECIAL CULTURAL OPERATIONS, PHYSIOLOGICAL DISORDERS,  
PESTS AND DISEASES, MANAGEMENT PRACTICES**

**MANGOSTEEN (*Garcinia mangostana*)**

Mangosteen is queen of fruits bearing beautiful at the same time very delicious globose deep purple fruits. Large tree growing upto 10-15 m without angular branches. It is considered as the finest fruit of the world.

- Native to Malay Arrhipelago and moluccas islands.
- Fleshy soft, well developed arid is the edible portion.
- 100 g of edible portion contains –

19.8 g CHO	Vit A – 14 IV  The fruit hull (pericarp) is used as an astringent in the treatment of diarrhea and dysentery and also in chlora.
0.5 g protein	
11 mg Ca	
17 mg P	
0.9 mg Fe	
66 mg Vit.C	

- Mangosteen cultivar is popular in Indonesia, Philippines, Burma, Sri Lanka and Malaysia.
- In Tamil Nadu → Selected places on slopes of Nilgiris (Tamil Nadu), Kanyakumari district.

**Climatic and soil requirements :**

Loves humid tropical conditions viz., high humidity and high temperature without abundant Rainfall and shady environment.

Maximum temperature should not go above 35°C. If the temperature goes below 20°C, retardation in growth occur.

Severe drought – Sunburn and drying of leaves. Should not have strong wind → cause injury to leaves and branching.

**Soil :** Deep clay to silt loam will be ideal.

**Types :** Occurrence of natural variability is limited because, the seeds are of asexual origin, they are formed from the nucellar tissue in the ‘parthenocarpic’ fruits.

**Propagation :**

Sets fruits by parthenocarpy (without pollination and fertilization) and also sets germinable seeds without fertilization propagated through seeds and the **plants** resemble the mother plant.

When seedlings attain 2 leaf stage – transplanted seedling growth is very slow seedlings do not reach more than 15 cm height ever after 2 years of girth (due to lack of adequate fibrous lateral roots).

**Vegetative propagation**

- Air-layering, grafting or budding
- Plants are planted at 10 m x 10 m spacing.
- For young plants, protection from scorching sun should be given.

**Manuring and fertilization :**

<b>Time of application</b>	<b>Before flowering</b>	<b>After flowering</b>	<b>After fruit set</b>
N (g/tree)	250	250	250
P (g/tree)	--	--	500
FYM (kg/tree)	--	--	25

- Irrigation needs regular irrigation in places where rainfall is light and good drainage where and rainfall is heavy.
- Frequency of irrigation – decided on the basis of weather and soil moisture.
- Mulching without grass and dried leaves – conserves soil moisture.

**Harvest and yield :**

Harvested at 90 days after full bloom when they are completely mature but still green. They will become soft and slightly purple in clear after 14 days if kept in ambient temperature.

If the trees are allowed to **sipe** on the trees (115 days after full bloom) – they develop deep purple colour).

Starts bearing in 7 years.

2 crops (August – October (main crop) and April-June)

A 20 years old tree will yield 23-25 kg.

**Physiological disorders****Gamboge and fruit splitting – Physiological disorders**

- Yellow exudation of gum on fruits and branches. Fruit splitting results in swollen arils without mushy pulp.
- More pronounced in fruits exposed to direct sunlight and in crop that matures in summer.

Heavy and continuous rains during fruit ripening favour gamboge and fruit splitting in certain locations.