



FACULTY OF AGRICULTURAL SCIENCES & ALLIED INDUSTRIES

- Botanical name : *Averrhoa carambola*
- Family : Oxalidaceae
- Chromosome no. :2n=24.

Preamble:

Carambola is popularly known as star fruit rich in vitamin C. It has medicinal value also. It is used as an alternative to tamarind in cooking.

Origin, Importance and uses

Origin

- Malaysia, Popular in China, Taiwan, Malaysia, Thailand, Pakistan, Indonesia and India. Distributed within 30° N and south of equator..

Importance and uses:

- Carambola is good source of vitamin A,B & C, minerals specially Fe, K, Mg and P.
- It is used as a dessert fruit or for preparing juice, jam, jelly and pickles.
- It has medicinal value also.
- Ground leaves and shoots for chicken pox, root extract as antidote for poisoning and pulp of immature fruits for cleaning brassware.
- It is used as an alternative to tamarind in cooking.

Climate and Soil

- Carambola grows well in both tropical and subtropical climate free from frost.
- But it prefers warm and moist conditions optimum temperature range is 21-32°C, 1800-2500 mm annual rainfall is best.
- It can be grown upto 1200m.
- It can be grown in any type of soil. But well drained, deep clay soils are preferable optimum pH is 5.2 to 6.2.
- Calcareous soils are not suitable.
- It can not with stand water logging.

Species and Cultivars

No specific cultivars but there are two types namely sour and sweet which are grown in India.

1. **Sour type:** 1% acid Var:Goldstar, 1 carambola.
2. **Sweet type:** 0.4% acid Var: Goldstar.

Florida

- Goldenstar Fwang tung, Dahpon.
- Teanma, Artin, Maha, Starking.
- Thaiknight, wheeler, New comb.

Singalopre: Lengbak, Turong

Taiwan: Intho, Cheng, Tyeyi Dahpon, Erlin soft sih.

Malaysia: B1, B2, BA, Bb, BB, B102, Bill.

Australia: Giant siam, Jungle gold, BCP-1 Hosie.

Thailand: Fwang tung, Thai Knagut.

Propagation

- Carambola is propagated by seeds, grafting, budding and layering. M-18960 as a stock is best for calcareous soils.
- Seeds should be sown immediately as they lose viability at a faster rate.
- Micro propagation is also being attempted.

Manuring and Irrigation

Manuring

- 1 tonne of carambola fruit is reported to remove 1.28 kg N; 0.12 kg P, 1.58 kg K.
- No recommended fertilizer dose is available. Addition of 'N' fertilizer improves the yield.
- Normally organic manures are only applied.

Irrigation

- Irrigations are given during fruit development only if the weather is dry.
- Trees may be provided 200 litre/ tree/ week in dry periods.
- Mulching will be very helpful in reducing weed growth and irrigation needs.

Planting

- Spacing 7-9 m X 5-7 m or high density planting with 7 x 3 m or 4.2 x 3.6m is also practiced in some countries depending upon the cultivar.
- 1 m cube pits are dug and filled with mixture of soil and manure.
- Planting can be done throughout the year but monsoon season is best for good establishment.

Pruning and Training

- Plant should be trained to have four to six main scaffold limbs from suitable height on the trunk.
- Pruning back old branches will improve quantity and quality of the fruit.

Harvesting and Yield

- Carambola produces fruit on both young and old branches and even on trunks in clusters. Grafts start bearing within a year but good yields can be had after 3 years. Seedlings take 4-5 years to come to bearing.
- Carambola being non-climacteric should be harvested at proper stage of maturity only, i.e. when 50% of fruit becomes yellow. On ripening fruit develops orange tinge.
- Yield varies from 20-50kg/tree in the early stages and a grown up tree may give 400-500 kg/tree.
- Carambola produces fruit throughout the year but peak seasons of harvest are Jan-Feb and Sept-Oct.
- Carambola takes about 3-4 months from flower to maturity.

Post Harvest Handling and storage

Ripening and storage

- Carambola is excellent in its keeping quality.
- Even under room temperature they store well for many weeks.
- They can be stored at 5°C for 12 weeks.