

13.	Grading of mango	E.g., Alfonso: A + Grade - > 300 gm ; A Grade - 250 -299 gm ; B Grade - 200-249 gm ; C Grade - 150-199 gm ; D Grade - < 150 gm For export to Europe, sizes from 270 gm to 335 gm are preferable.
14.	Packing	Packaging material should not have been treated with chemicals and should not cause any contamination.

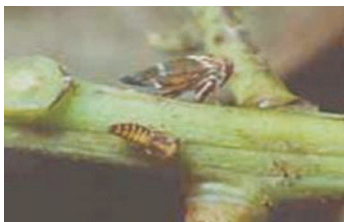
Common Insects and Diseases of Mango Crop



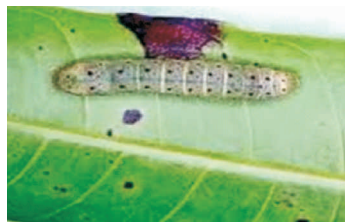
Fruit fly



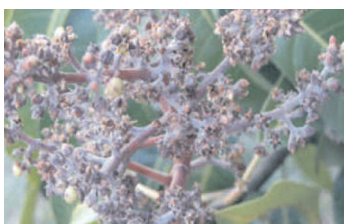
Mealy bugs



Leafhopper



Shoot caterpillar



Powdery mildew

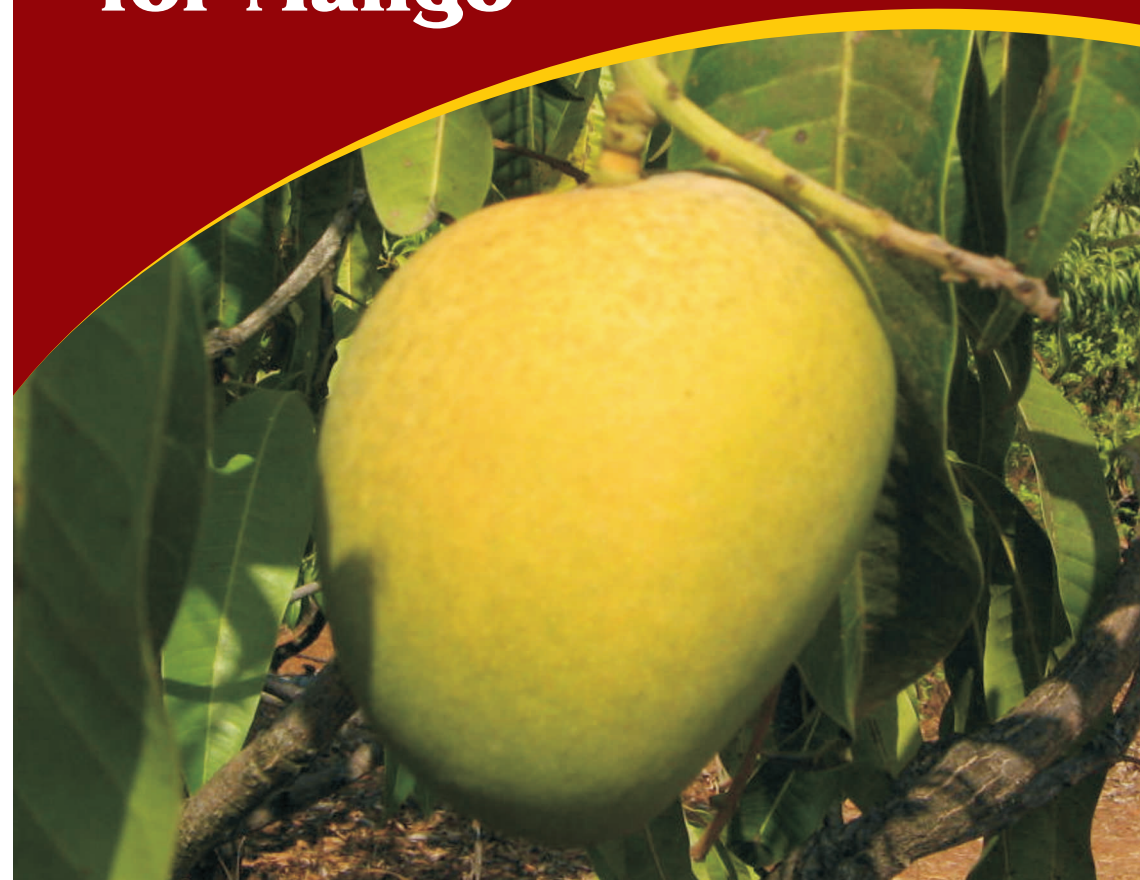


Anthracnose



Mango anthracnose stem end rot

Organic Package of Practices for Mango



International Competence Centre for Organic Agriculture
951C, 15th Cross, 8th Main, Ideal Homes Township, Rajarajeshwari Nagar, Bangalore - 560 098. INDIA.
Ph: +91-80-28601183, 28607200 Tel. Fax: +91-80-28600935 E-mail: info@iccoa.org, Web: www.iccoa.org

**INTERNATIONAL COMPETENCE CENTRE FOR ORGANIC AGRICULTURE (ICCOA)
BANGALORE**

Organic Mango Cultivation

S.No.	Organic Activity	Details
1.	Selection and preparation of land	Soils with a pH range of 7 -7.5 and more than 1% of organic carbon are well suited for mango cultivation. It is required to test the soil once a year to check the levels of pH, organic carbon, macronutrients (NPK) and microbial population in the field. If the organic carbon content is less than 1%, apply 25-30 tons/ha of FYM and plough the field 2-3 times to mix the manure thoroughly. Adequate buffer zone must be provided between certified organic fields and non-organic fields at a distance of about 7 meters from non-organic fields to prevent drift of prohibited materials on to certified organic fields. Pit size : 90cmx90cmx90cm ;Space: 7 to 10 m either way.
2.	Planting time	July - December, depending upon the monsoon in the area.
3.	Varieties and planting materials	Seedling selection is an important step in organic mango production. Seedling should be carefully selected from certified organic farms or nurseries which are raised organically. The seedlings which are not treated with chemicals can also be used in the absence of organically produced seedlings. Select disease resistant and locally demand varieties. There are both short and long duration varieties. The commonly grown varieties are Badami, Alfanso, Sindoora, Totapuri, Neelam, Mallika, Malgoba and Rasapuri.
4.	Manuring during planting	25 kg FYM (mixed with Azospirillum + PSB) + 5 kg vermicompost per pit. Apply green manure in June/July. Grow leguminous crops as intercrops for nitrogen fixing and green cover. Manuring for bearing trees: Upto 40-50 kg FYM/compost/mixed with Bio fertilizers or 25 kg of vermicompost per tree should be applied as a ring application about 60 cm away from the tree. Green manure crops or leguminous crops can be grown as inter crops. (Nitrogen fixing crops during mango flower initiation time should be avoided).
5.	Irrigation	The newly planted grafts need about 25-30 litres water every day. Young plants upto 2 years should be watered regularly. Irrigating the grown up trees after fruit set at 10-days interval increases their yield. Drip irrigation is better. (For inter crops, irrigation should be avoided during first two months of dry period since this will interfere with bud formation of mango).
6.	Weed management	Mulching with straw/weeded grass during the first few years of establishment may be useful in controlling weeds. In older mango orchards, weed management is easy due to shading and leaf litter.
7.	Pruning	Overlapping, inter-crossing, diseased, dried, weak branches are removed to get good sunlight and aeration. For internal branches, pruning may be done during August- September, once in three years.
8.	Flowering	Do not allow flowering until 4th year. Flowers should be nipped off to encourage plant growth during that period.
9 a)	CROP PROTECTION <u>Insect mgmt.</u> Fruit Flies	Fruit flies can be controlled by harvesting the crop early when fruits are mature green. Removal of fruits with dimples and oozing clear sap. Collection and destruction of fallen and damaged ripe fruits and practicing field sanitation. Use 10 pheromone traps/ha for controlling fruit-flies.

	Mango Mealy bugs	Spraying steady stream of water on the host plant. Pruning the affected plant parts to remove mealy bugs. Application of chilli and soap sprays. Mealy bugs lay eggs on the ground next to the trunk. By wrapping smooth plastic bands around the trunk, the larvae can be prevented from infesting larger area. Spray 1% soft soap solution (Khadi soap). Place Methyl eugenol traps @ of 5-6 ha locations at different locations in the field.
	Mango leafhopper	Spray garlic extract and neem oil.
	Scale insect	Winter spraying with paraffin oil (white oil) as a 3% water emulsion
	Mango shoot caterpillar	Spray Biodynamic pesticide prepared from cow urine, neem, karanj castor, Vitex spp etc. Spray Nettle leaf extract .This is prepared by soaking 250 g of nettle leaf powder in 4-5 litres of water for 24 hrs. Filter the extract and mix in 20 litres of cow urine. Dilute to 200 litres in water and spray on foliage to control pests.
b)	<u>Disease management</u> Powdery mildew Anthracnose Anthracnose Stem end rot	Keep an open well ventilated tree population and cut back coronets regularly. Application of elemental sulphur dust when there is no wind and when the leaves are moist with due. Good canopy, nutrition and soil management are essential. Close monitoring and application of copper hydroxide & potassium bicarbonate sprays help in controlling the disease. Use of Pseudomonas fluorescens, Verticillium lecanii, Beauveria bassiana and neem oil as foliar sprays. In Uttar Pradesh, application of cow dung paste has almost replaced the spray of Copper Oxy chloride for the control of die back in rejuvenated old mango orchards. It is also effective in controlling anthracnose and control of stem borer.
10.	Harvesting and storage	The fruits should be harvested at the correct stage to obtain the characteristic taste and flavour. The accurate method of finding maturity is by sinking the fruits in water and when fruits fully sink in water, they are considered to have attained full maturity. Harvesting of fruits should be done before 10 a.m. or after 4 p.m. to keep fruits fresh, turgid for longer shelf life. Harvest only matured fruits as frequently as possible in about 4-6 rounds. It is important that all fruits should have pedicels intact to avoid oozing of latex on fruit surface spoiling appearance. Store the fruits in a shaded area or room with good ventilation.
11.	Post harvest treatment	Dip the fruits in 52°C hot water immediately after harvest for 5 minutes followed by 8% plant wax to reduce anthracnose disease in mango during storage.
12.	Yield	Yielding starts from 4th year. Initial yield 30 kg /tree (depending upon the variety). From 10th year peaks to more than 100 kg/tree (depending upon the variety). Economic viability of tree is 30 years.