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# MANGO

- Common Name : Mango
- Botanical Name : *Mangifera indica* L.
- Family : Anacardiaceae
- Origin : Indo-Burma region
- Genus : *Mangifera*
- Species : *indica*
- Chromosome No.:  $2n= 40$  (Amphidiploid)
- Pollination Type : Cross
- It is national fruit of India. India ranks First in the area and production of Mango fruit in the world.
- In India, Mango is grown in 2.3 million hac. Area with a production of 15.2 MT with an average productivity of 6.6 MT/hac. (in 2010-2011) source NHB.
- It is leading fruit crop of India and considered to be the king of fruits. In India it has been grown for over 400 years. India shares about 56% of total mango production in the world.
- Mango occupies 22% of the total under fruits in India. Uttar Pradesh and AP. Are having the largest area under mango each with around 25% of the total area followed by Bihar, Karnataka, Kerala and Tamilnadu.



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# Varieties

- Eastern- Himsagar, Fazli, Langra, Bombay
- Western- Alphonso, Pairi, Rajapuri, Kesar
- Northern- Dashehari, Langra, Bombay Green, Chausa
- Southern- Neelum, Banganapalli, Totapuri, Mulgoa, Raspuri, Swarnarekha, Rumani, Badami
- Hybrids- Amrapali, Mallika, Arka Aruna, Arka Anmol, Arka Neelkiran, Arka Puneet, Neeleshan, Neeleshwari, Ratna, Sindhu.

## **Soil and climate**

Ideal soil for mango is red loamy. Good drainage is preferable for better establishment. Ideal pH range is from 6.5 to 8.0.

## **Season of planting**

Planting spreads from July to December.

## **Sexual Propagation:**

- Seed

## **Vegetative Propagation:**

- Inarching / approach grafting, Veneer grafting, Stone Epicotyl grafting, Soft-wood grafting
- Budding
- Air layering



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# Planting

- Time of planting- during the monsoon when there is sufficient moisture in the atmosphere (July to December).
- • Planting distance- The planting distance varies according to variety, the fertility level of the soil and general growth conditions in the area.
- Where the growth is excessive, the distance should be 12 x 12 m, but in the dry zones where the growth is less, it can be regulated to about 10 x 10 m.
- For high density planting, the distance can be 5 x 3 or 5 x 2.5 or 3 x 2.5 or 2.5 x 2.5 m.
- • Size of pits- In locations where the soil is loamy and deep, pits of 0.5 x 0.5 x 0.5 m be dug at desired distances. However, in shallow and hill soils, the pits should at last be of 1 x 1 x 1 m size.
- • Filling of pits- The pits should be filled with the original soil mixed with 50 kg well rotten FYM. In the top two-third portion, the proportion of the manure and soil may be kept as 1:3. If the soil is having infestation of white ants, 200-250 g of aldrex or BHC dust may also be mixed.



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# Training and Pruning

- The training of the plants in the initial stages is very essential to give them proper shape.
- Rootstock sprouts and low lying branches (at least 75 cm of the main stem ) have to be removed.
- Remove overlapping, inter crossing, diseased, dried and weak branches in old trees to get good sunlight and aeration.
- For the internal branches, pruning may be done during August – September, once in three years.
- Flowering should not be allowed up to three years.



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# Manure and Fertilizers

- Fertilizers may be applied in two split doses , one half immediately after the harvesting of fruits in June/July and the other half in October, in both
- young and old orchards followed by irrigation if there are no rains. Foliar application of 3 % urea in sandy soils is recommended before flowering.
- Well decomposed farm-yard manure may be applied every year. For trench application of fertilizers, 400g. each of N and K<sub>2</sub>O and 200g. of P<sub>2</sub>O<sub>5</sub> per plant should be provided. Micro-nutrients may be applied as per the requirement in the form of foliar sprays.



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# Irrigation

- Amount and frequency of irrigation depends upon the type of soil, prevailing climatic conditions.
- No irrigation is required during the monsoon months unless there are long spells of drought.
- During the first year when the plants are very young with shallow root system, they should be watered every 2-3 days in the dry season.
- Trees in the age group of 2-5 years should be irrigated at 4-5 days interval. • The irrigation interval could be increased to 10-15 days for 5-8 years old plants during dry season.
- When trees are in full bearing stage, generally 2-3 irrigations are given after the fruit set.
- Profuse irrigation during 2-3 months preceding the flowering season is not advisable. Irrigation should be given at 50 per cent field capacity.
- Generally, intercrops are grown during the early years of plantation and hence frequency and method of irrigation has to be adjusted accordingly.
- It is advisable to irrigate the mango plants in basins around them which can be connected in series or to the irrigation channel in the centre of rows.



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# Intercropping

It is always advisable to avoid tall growing exhaustive crops like maize, sugarcane, bajara, *etc.*

- Some fertility restoring crops like legumes and leguminous cover crops should be included into the intercropping patterns. The partial shade loving crops like pineapple, ginger, turmeric, *etc. can be grown in fully grown orchards.*
- In addition to field crops, some short duration, less exhaustive and dwarf type inter-fillers like papaya, guava, peach, plum, *etc. can also be grown till these do not interfere with the main mango crop.*
- Leguminous crops of like green gram, black gram, gram; *etc.*, cereals like wheat; oilseeds like mustard, sesame and groundnut and vegetables crops such as cabbage, cauliflower, tomato, potato, brinjal, cucumber, pumpkin, bitter gourd, lady's finger, *etc.* and spices like chillies can be successfully grown as intercrops.



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# Plant Protection

## **Insect Pests**

Insect pests mostly observed are mealy bug, hopper, inflorescence midge, fruit fly and scale insects. For controlling these insects, spraying with carbaryl, monocrotophos, phosphamidon & methyl parathion are recommended.

## **Diseases and Disorders**

The crop is suspect to diseases like powdery mildew, anthracnose, die back, blight, red rust, sooty mould, etc. In order to control these diseases spraying of appropriate chemicals/fungicides have to be undertaken preferably on preventive basis.

Disorders can also affect the crop if proper care and control measures are not taken. The major among these are malformation, biennial bearing, fruit drop, black tip, clustering etc. The grower needs to seek advice and professional assistance to prevent/control diseases and disorders in the crop.





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# Harvesting and Yield

- The orchard starts bearing from sixth year onwards and the economic life of a mango tree exceeds 35 years.
- Yield of fruits varies considerably according to the variety, climatic conditions, plant population etc. On an average, the yield ranges from 5 to 9 t/acre. Grafted plants start bearing early.