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Center for Smart Agriculture

Hi Tech Fruit Culture



Module 5: Pest And Disease Management
Session 1: Mango Pests And Disease



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DISEASES OF MANGO

1) Powdery mildew

Symptoms:

- A whitish powdery growth covers the stalks of the panicle, flowers and tender fruits.
- The whitish growth of the fungus comprising of asexual fruiting body and conidia.
- The affected flowers and fruits drop prematurely reducing the setting of fruits.





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Management

- The disease can be managed by pruning of diseased leaves and malformed panicles and three sprays of fungicides at different stages starting with Wettable Sulphur (0.2%) at the panicle size of 7.50 -10.00 cm followed by Dinocap (0.1%) after 15-20 days of first spray and Tridemorph (0.1%) after 15-20 days of second spray.

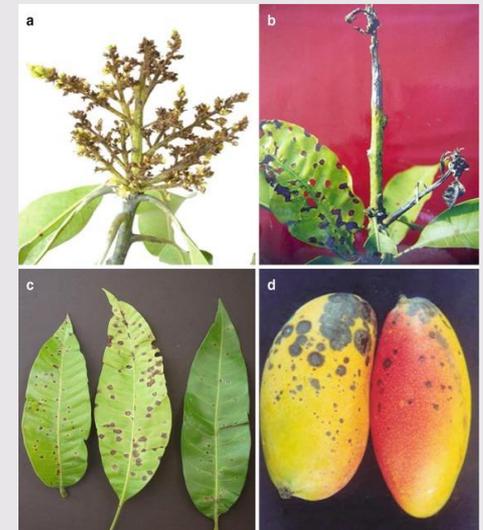




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2)Mango anthracnose:

- Anthracnose is also known as blossom blight, leaf spot, fruit rot and twig blight. This disease is severe both in field and storage. The disease is present all mango area of India
- The varieties **neelam and bangalora are highly susceptible** to this disease.
- The fungus attacks tender shoots and foliage. Brown or dark circular or irregular spots are formed on the leaves and fruits and such leaves become crinkled.





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Management

- Spraying of Bordeaux mixture 0.6% in the young plants during Feb, April and sept controls the disease.
- Spraying carbendazim 0.1% or thiophanate-methyl 0.1% or chlorothalonil 0.2% for 15 days interval, until harvest effectively controls anthracnose.

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3)Sooty mould: The disease is of common occurrence and affects many kinds of fruits and plantation crops.

SYMPTOMS:

- The fungi produce mycelia, which is usually superficial and dark. They grow on the flowers, both tender and old leaves, stems and fruits.
- During flowering time, its attack results in reduced fruit set and cause fruit fall. Black coating is also found on the fruits.
- Appearance of the affected fruits is lost and the price for such ugly fruits is usually low





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Management:

- Both the insects and sooty moulds are to be simultaneously controlled in the eradication process. The insects are to be controlled by spraying with carbaryl or phosphamidon 0.03%.
- It is followed by spraying with a dilute solution of starch or maida 1%. On drying, the starch comes off in flakes and the process removes the black mouldy growth fungi from different plant parts.





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7) Phoma Blight :

- The symptoms of the disease are observed only on old leaves.
- Initially, the lesions are angular, minute, irregular, yellow to dark brown, scattered over leaf lamina.
- As the lesions enlarge, their colour changes from brown to cinnamon and they become almost irregular

Control :

- The disease is controlled by spraying Benomyl (0.2%) just after the appearance of the disease followed by 0.3% Miltox (Copper Oxychloride + Zineb) at 20 day interval.





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PESTS OF MANGO

1) Hopper (*Amritodus atkinson*) :

- Large number of nymphs and adult insects puncture and suck the sap of tender parts, thereby reducing the vigour of the plants. Heavy puncturing and continuous draining of the sap causes curling and drying of the infested tissue.
- They also damage the crop by secreting a sweet sticky substance which facilitate the development of the fungus sooty mould, commonly known as sooty mould affecting adversely the photosynthetic activities of the leaves.





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Control

- Three sprays of 0.15% Carbaryl or 0.04% Monocrotophos or 0.05% Phosphamidon or 0.05% Methyl Parathion are effective in controlling the hoppers.
- Biological control agents such as the predators *Mallada boninensis* and *Chrysoparla lacciperda*, the egg parasite *Polynema sp.* and a preparation of the fungus *Beauveria bassiana* are important and useful in controlling this pest.





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3) Nut Weevil (*Sternochetus mangiferae*):

- Grub makes zigzag tunnels inside the pulp
- Eats unripe tissue and bore into cotyledons
- Fruit dropping at marble stage

Control:

- The pest population can be kept under check by destroying the affected fruits and exposing the hibernating weevils by digging the soil. Spraying the trees with Fenthion (0.01%) is found effective.
- In Totapuri, Carbaryl 50 % WDP @ 4 g/ litre of water is effective in controlling stone weevil.



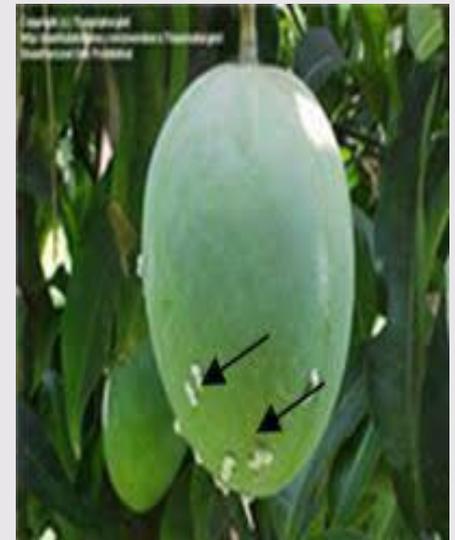


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4) Mealy Bugs (*Drosicha mangiferae*):

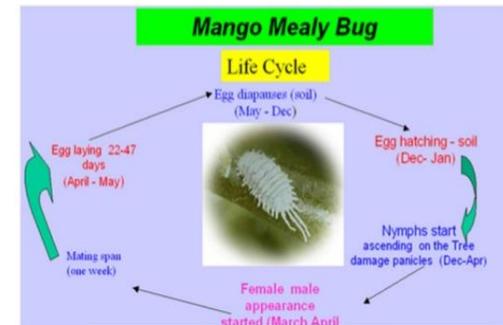
- Nymphs and adults suck the plant sap and reduce the vigour of the plant. Excessive and continuous draining of plant sap causes wilting and finally drying of infested tissue.
- They also secrete honey dew, a sticky substance, which facilitate the development of the fungus *Maliola mangiferae* (sooty mould).





Control

- Flooding of orchards with water in the month of October kills the eggs.
- Ploughing the orchards in the month of November exposes the eggs to sun's heat.
- Polythene bands of 400 gauge and 25 cm width fastened around the tree trunk have been found effective barrier to stop the ascent of nymphs to the trees. The band should be fastened well in advance before the hatching of eggs, i.e., during November- December.
- The entomogenous fungus *Beauveria bassiana* is found to be an effective bioagent in controlling the nymphs of this pest.





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5)Fruitfly (*Daccus dorsalis*):

- The female punctures the outer wall of the mature fruits with the help of its pointed ovipositor and insert eggs in small clusters inside the mesocarp of mature fruits.
- After hatching, the larva feeds on the pulp of fruit which appears normal from outside, but drops down finally.
- The mature maggots fall down into the soil for pupation

Control:

Bait sprays of Carbaryl (0.2%)+protein hydrolysate (0.1%) or molasses starting at first week of April and repeated once after 21 days or hanging traps containing 100 ml water emulsion of Methyl Eugenol (0.1%) + Malathion (0.1%) during fruiting is effective.



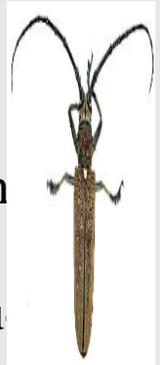


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6) Stem borer :

Damage symptoms :

- Grub tunnels in the sapwood on the trunk or branches
- Grub bore into the sap wood and making irregular tunnels
- Feeding the vascular tissues
- Interruption of nutrient and water transport on the tissues
- Drying of terminal shoot in early stage
- Frass comes out from several points and sometimes sap oozes out of the holes



Control: Cleaning the tunnel with a hard wire, pouring kerosene oil, petrol, crude oil or formalin and subsequently closing entrance of the tunnel with mud kills the grub.





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