



Papaya Ring Spot Disease

- The earliest symptoms include yellowing and vein-clearing of young leaves.
- Distinctive ring spot patterns are formed on fruit consisting of concentric rings and spots.
- Prominent yellow mottling of the leaves is seen followed by severe blistering and leaf distortion.
- Dark green streaks and rings are formed on the leaf stalks and stems.
- Fruit set is usually reduced and plant vigour declines.
- Fruit quality and flavour are adversely affected.

Symptoms of Papaya Ring Spot



Mode of Spread

- Papaya ring spot disease is spread from plant-to-plant by several species of aphids.
- Aphid feeds on an infected plant and then moves to the next host plant transmitting the virus.
- Papaya ring spot disease does not survive in soil or dead plant material.
- The movement of infected papaya plants can spread the virus over long distances.

Management

- There is no cure for papaya ringspot disease.
- In case of severe symptoms, diseased trees should be destroyed, as they provide a source of infection for further spread.

Phytophthora Root Rot of Papaya

- **Symptoms**

- **Fruit:**

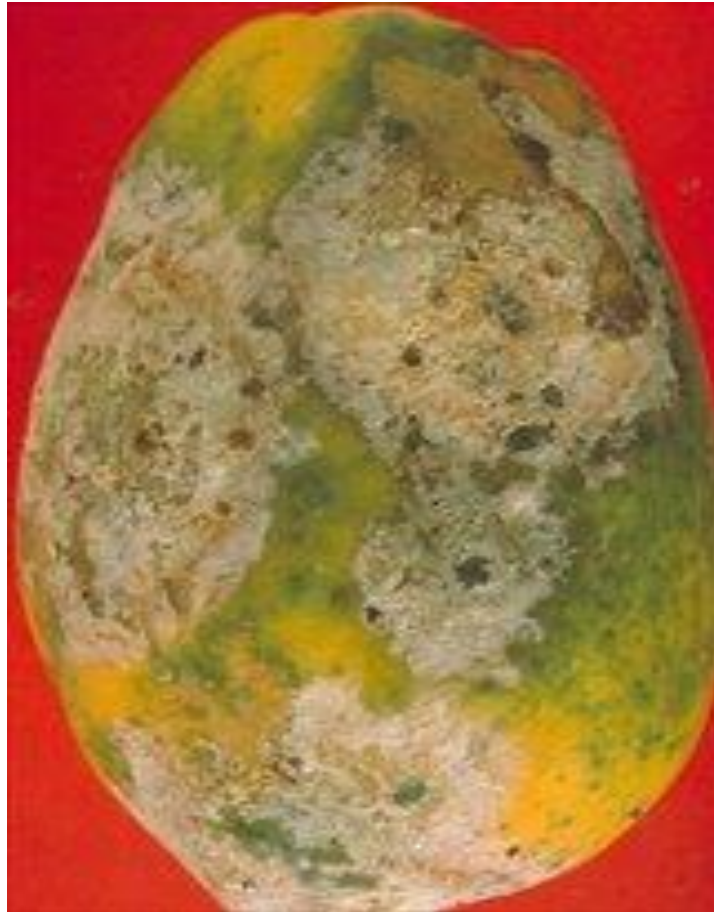
- Infection of ripe and unripe fruit occurs when they are still attached to the stem.
- Lower fruit are infected first.
- If rot develops quickly then fruit becomes covered with a white growth containing spores of the water mould.
- Other fungi and bacteria may also invade the fruits, increasing the rot symptoms.
- Fruit shows shriveling symptoms and falls on the ground.

- **Stems:**
- Stems, especially of younger trees, also become infected through leaf and fruit scars.
- Rot causes the tops of the trees to wilt and die.
- **Roots:**
- Rot also develops at the base of the stem near soil level as the decaying roots become the source of infection.
- These lower rots also cause leaves to turn yellow, wilt and collapse, with only a few small leaves remaining at the top of the tree.
- **C.O.** *Phytophthora palmivora*
- *Phytophthora nicotianae*

Papaya Fruit infected by *Phytophthora palmivora*



Papaya Fruit showing Cottony Growth of Fruit Rot caused by *Phytophthora nicotianae*



Stem Rot caused by *Phytophthora palmivora*



Wilt Symptoms caused by *Phytophthora palmivora*



Disease Cycle

- Water moulds survive in the soil as thick-walled resting spores called chlamydospores which germinate and produce sporangia under favourable conditions.
- Zoospores are produced inside the sporangia and these can cover short distances in the water between soil particles. If they reach the fine feeder roots of papaya then they germinate and infect.
- Spores of water moulds are spread in rain splash and in wind driven rain to the lower fruit and young stems.
- They are also spread in surface water, and in soil on machinery and shoes.

Management

- **Cultural Control**

Papaya should be planted in well drained soil. Waterlogged soil favours water moulds.

- Planting should be done on raised beds to prevent accumulation of surface water.

- Destroy all fallen fruit and diseased stems of papaya trees after harvest.

- **Chemical control**

Application of Ridomil MZ-72 @ 02 gm/liter of water.

Powdery Mildew of Papaya

- **Symptoms:**
- Powdery mildew infects papaya plants at all stages of growth.
- Seedlings grown in greenhouses are especially susceptible.
- The disease frequently infects immature leaves but can also attack unripe fruits.
- The powdery mildew also appears on papaya petioles and peduncles.

Symptoms...

- The small water-soaked spots appear on undersides of leaves that become powdery patches of mycelium and spores.
- The mildewed areas grow in size and coalesce causing severe yellowing between the veins.
- The spore-forming mycelium grows around the leaf edge and becomes visible on the upper leaf surface and petioles.

Symptoms of Powdery Mildew on Papaya Leaves



Symptoms of Powdery Mildew on Papaya Fruit



- **Factors Favouring**

- High humidity and moderate temperatures (18-32 ° C) favour the disease.

- **C.O.** *Oidium caricae*

- ***Management***

- Adoption of suitable cultural practices to prevent inoculum.
- Spray of Amistar @ 0.5 ml / liter of water.
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*Sources

- 1. Recommended books.
 - 2. Latest research articles downloaded from Google.
 - 3. Google images.
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- *Solely for academic purpose and guidance of students.