

Diseases of Banana

1. Panama disease: *Fusarium oxysporum*



Symptoms

- Yellowing of the lower most leaves starting from margin to midrib of the leaves.
- Yellowing extends upwards and finally heart leaf alone remains green for some time and it is also affected.
- The leaves break near the base and hang down around pseudo stem.
- Longitudinal splitting of pseudo stem. Discoloration of vascular vessels as red or brown streaks.
- The fungus spreads through use of infected rhizomes Continuous cultivation results in buildup of inoculum.

Management

- Avoid growing of susceptible cultivars viz., Rasthali, Monthan, Red banana and Virupakshi.
- Grow resistant cultivar Poovan.
- Since nematode predispose the disease pairing and prolinage wit Carbofuran granules.
- Corm injection of 3 ml of 2% Carbendazim injected in the corm by making a hole to a depth of 10cm with 45 0 angle on 5th and 7th month as mentioned earlier.

2. Moko disease: *Pseudomonas solanacearum* / *Burkholderia solanacearum*

Symptoms

- Leaves become yellow and progress upwards.
- The petiole breaks and leaves hang. When it is cut open discoloration in vascular region with pale yellow to dark brown color.
- The discoloration is in the central portion of the corm.
- Internal rot of fruits with dark brown discoloration. When the pseudo stem is cut transversely bacterial ooze can be seen.



Management

- Eradicate infected plant. Expose soil to direct sunlight.
- Use of clean planting material.
- Fallowing and crop rotation is advisable.
- Disinfection of pruning of tools.
- Providing good drainage.

3. Tip over or Heart rot: *Erwinia carotovora* subsp. *Carotovora*



Symptoms

- The base of the pseudostem and upper portion of the corm are affected and leads to rotting.
- Young 1-3 month old plantation susceptible during summer months.

Management

- Plant disease free suckers.
- Remove infected plants and destroy.
- Drench with Methoxy ethyl mercuric chloride (Emisan-6) 0.1 / or Sodium hypochlorite 10% or Bleaching powder 20g /litre/tree.

4. Sigatoka disease : *Mycosphaerella musicola* (*Cercospora musae*)



Symptoms

- On leaves small light yellow or brownish green narrow streaks appear.
- They enlarge in size becomes linear, oblong, brown to black spots with dark brown band and yellow halo.
- Black specks of fungal fruitification appear in the affected leaves.
- Rapid drying and defoliation of the leaves.

Management

- Removal and destruction of the affected leaves.
- Spray Propiconazole + Carbendazim 0.1% or Chlorothalonil 0.25%. Add wetting agent such as teepol or sandovit added at the rate of 1ml/lit of water.

5. Cigar end Rot (*Verticillium theobromae*, *Trachysphaera fructigena* and *Gloeosporium musarum*)



Symptoms

- A black necrosis spread from the perianth into the tip of immature fingers.
- The rotted portion of the banana finger is dry and tends to adhere to fruits (appears similar to the ash of a cigar).

Management:

- Removal of pistil and perianth by hand 8-10 days after bunch formation and spraying the bunch with Dithane M -45 (0.1%) or Topsin M (0.1%) controls the disease effectively.
- Minimising bruising; prompt cooling to 14°C; proper sanitation of handling facilities reduces the incidence in the cold storage.

6. Anthracnose: *Gloeosporium gloeosporioides*



Symptoms

- The skin at the distal ends of the fingers turn black shrivels.
- The fungus produces masses of conidia which form a pinkish coat.
- The entire fruit and bunch is affected in severe cases. Sometimes main stalk of bunch diseased.
- The bunch becomes black and rotten.

Management

- Post harvest dipping of fruits in Carbendazim 400 ppm, or Benomyl 1000 ppm, or Aureofunginsol 100 ppm.

7. Freckle or Black Spot: *Phyllostictina musarum*



Symptoms

- Minute raised dark brown spots appear with black dots in the centre on leaves and fruits. On the fruits the pathogen is confined to the skin.
- The fungus produces pycnidium which are dark. conidiophores simple, short, elongate. Conidia are byline, single celled ovoid.
- Fungus survives in infected plant debris. Conidia spread by rain water and wind.

Management

- Spray Copper oxychloride 0.25%. Add wetting agent such as teepol or sandovit added at the rate of 1ml/lit of water.

8. Banana bunchy top: Banana bunchy top virus



Symptoms

- Subsequent leaving show the same symptoms and are dwarfed.
- Dark broken bands of green tissues on the veins, leaves and petioles.
- Plants are extremely stunted.
- Leaves are reduced in size marginal chlorosis and curling.
- Leaves upright and become brittle.
- Many leaves are crowded at the top.
- Branches size will very small.
- If infected earlier no bunch will be produced.

Management

- Select suckers from disease free areas. Control vector by spraying methyl demeton 1 ml/l.or Monocrotophos, 2 ml/l.or Phosphomidon 1 ml / lit. or Injection of Monocrotophos 1 ml / plant (1 ml diluted in 4 ml).
- Infected plants are destroyed using 4ml of 2, 4, D (50g in 400 ml of water).

9. Infectious chlorosis: Cucumber mosaic virus



Symptoms

- Chlorotic or yellow linear discontinuous streaks on leaves, upward curling of leaves, twisting and bunching of leaves at the crown, erectness of newly emerged leaves.
- Sometimes heart rot symptom also appear. Diseased plants are dwarf, do not produce bunches.
- The virus spreads through infected suckers and aphid vectors -Aphis gossypii.

Management

- Destroy infected plants. Use disease free suckers. Control vector by spraying systemic insecticide 0.1%.

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