4. Phytopthora fruit rot

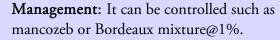
Water-soaked lesions on unripe fruit that oozes latex; withering fruit; water-soaked lesions on leaf scars of fruit bearing stem; mature fruit covered in white mycelium.

Management: It can be controlled such as mancozeb or Bordeaux mixture@1%.



5. Cercospora black spot

Tiny black dots on fruit which enlarge to 3 mm across; spots are slightly raised and although indistinct on unripe green fruit, become visible on ripening to yellow; lesions on leaves are irregular in shape and gray-white in color; if infestation is severe, leaves may turn yellow and necrotic and drop from plant.





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Advance Production Technology of Papaya





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Papaya (Carica papaya) has a high nutritive and medicinal value. Papain prepared from dried latex of its immature fruits is used in pharmaceutical industries, textile and garment cleaning paper.

Varieties: Pusa Delicious, Pusa Majesty, Pusa Giant, Pusa Dwarf, Pusa Nanha, Taiwan.

Planting Material: Papaya is commercially propagated by seed and tissue culture plants. The seed rate is 250-300 g./ha. The seedlings can be raised in nursery beds 3m. long, 1m. wide and 10 cm. high as well as in pots or polythene bags.. About 15-20 cm tall seedlings are chosen for planting in about two months.

Planting season: Papaya is planted during spring (February-March) and monsoon (June-July).

Spacing: A spacing of $1.8 \times 1.8 \text{ m}$. is normally followed. A closer spacing of $1.2 \times 1.2 \text{ m}$. for cv. Pusha Nanha is adopted for high density planting, accommodating 6,400 plants/ha.

Planting Method: The seedlings are planted in pits of 60x60x60 cm. size. In the summer months the pits are dug about a fortnight before planting. The pits are filled with top soil along with 20 kg. of farmyard manure., 1 kg. neem cake and 1 kg. bone meal.

Nutrition: Papaya plant needs heavy doses of manures and fertilizers. Apart from the basal dose of manures (@ 10 kg./plant) applied in the pits, 200-250 g. each of N, P_2O_5 and K_2O are recommended for getting high yield. Application of 200 g. N is optimum for fruit yield but papain yield increases with increase in N upto 300 g.

Removal of male plants: About 10% of the male plants are kept in the orchards for good pollination where dioecious varieties are cultivated. As soon as the plants flower, the extra male plants are uprooted.

Importance Insect, Pest and Diseases:

1. Papaya mealybug

Flattened oval to round disc-like insect covered in cottony substance on tree; chlorosis, plant stunting, leaf deformation, early leaf and fruit drop insects attract ants which may also be present; insect colony may also be associated with growth of sooty mold due to fungal colonization of sugary honeydew excreted by the insect.



Management: Mealybugs can potentially be controlled by natural enemies such as lady bird beetles . Spraying of insecticides like Dimethoate or Imidacloprid @1.5 ml/L

2. Papaya ring spot

Dark green rings on fruit which may be slightly sunken and become less distinct as the fruit ripens; fruits may have uneven bumps; leaves often exhibit a bright yellow mosaic pattern and new leaves are small and plant growth is stunted.



Management: Spraying of insecticides like Dimethoate or Imidacloprid @1.5 ml/L

3. Anthracnose and charcoal spot

Small water-soaked lesions of fruit during ripening, circular sunken lesions with light brown margins.

Management: Spraying of Mancizeb or Carbendazim @2g/L; dipping fruits in hot water at 48°C for 20 minutes reduces the incidence of the disease.

