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*Shaping Lives...
Empowering Communities...*

Domain

Smart Agriculture

Course

Management of high-value cut-flowers

Project topic

Pest-disease management of Dutchrose



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Insects



Aphids

Macrosiphum rosae

Aphids cluster around growing shoots and buds, and suck cell sap. Affected plant parts get deformed.

- **Chemical control**

Imidachloprid @ 0.5 ml per litre of water or
Dimethoate @ 1.5 ml/ litre of water or
Acephate @ 0.75 g per litre of water or
Thiomethoxam @ 0.5 g per litre of water.

- Spraying of neem or pongamia oil @ 2% is effective.
- Other than chemical management, hanging of yellow sticky trap is also beneficial.



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Scale insect: *Aonidiella aurantii*



Damage Symptoms

Reddish brown encrustations on shoots; both young and adult scales suck the sap from shoots. The insect damages the plant by secretion of honeydew which leads to development of sooty mould. Further, they cause yellow spots on leaves.

Management

- **Chemical control**

Dimethoate @ 1.5 ml/ litre of water or
Chloropyrifos @ 2.1 ml/ litre of water or
Dichlorovos @ 1.0 ml/ litre of water.

- Prompt pruning and burning of infested plant parts reduces further spread.
- Scales can be removed by rubbing the scurf encrustation with toothbrush or cotton swab dipped in 70% Isopropyl alcohol or methylated spirit.



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Spider mite *Tetranychus urticae*



Damage Symptoms

The injuries due to feeding can be seen as silvery, mottled leaves which turn yellow. : Discolouration, bronzing and drying of leaves.

Management

- **Chemicals**

Dicofol @ 2 ml per litre of water or

Ethion @ ml per litre of water or

Dimethoate @ 1.5 ml per litre of water or

Propagite @ 1 ml per litre of water

- Collection and burning of severely infested plant parts reduce further multiplication of mites. Proper ventilation, irrigation, maintenance of relative humidity and clean cultivation are essential to curtail the mite population.



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Thrips

Rhipiphorothrips cruentatus
Scirtothrips dorsalis



This insect is 1-2-mm long, has black and white wings. The larvae tend to hide underneath leaves.

Symptoms

Thrips damage new flush by sucking sap from tender parts; *Scirtothrips* is a problem in polyhouse roses. It creates brownish spots on crippled flowers and deformed buds, the leaves look silvery, caused by air pockets in the punctured holes, brownish marks underneath the leaves.

Management

- **Chemical**

Dimethoate @ 1.5 ml/ litre of water or
Acephate @ 0.75 g per litre of water or
Thiomethoxam @ 0.5 g per litre of water or
Dichlorovos @ 1.0 ml/ litre of water.

- All infested plants and flowers should be removed. Hanging of blue sticky trap is beneficial to manage thrips.



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Caterpillar

Euproctis fracterna



Symptoms

Larvae feed on the leaves, buds, and flowers resulting in defoliation and flower loss.

Management

- Collection and destruction of egg masses on lower side of leaves, Light traps attract adult moths.
- Spraying Quinalphos @1.0 ml/litre of water or Dimethoate @ 1.5 ml/ litre of water or Chloropyriphos @ 2.1 ml/ litre of water or Dichlorovos @ 1.0 ml/ litre of water.

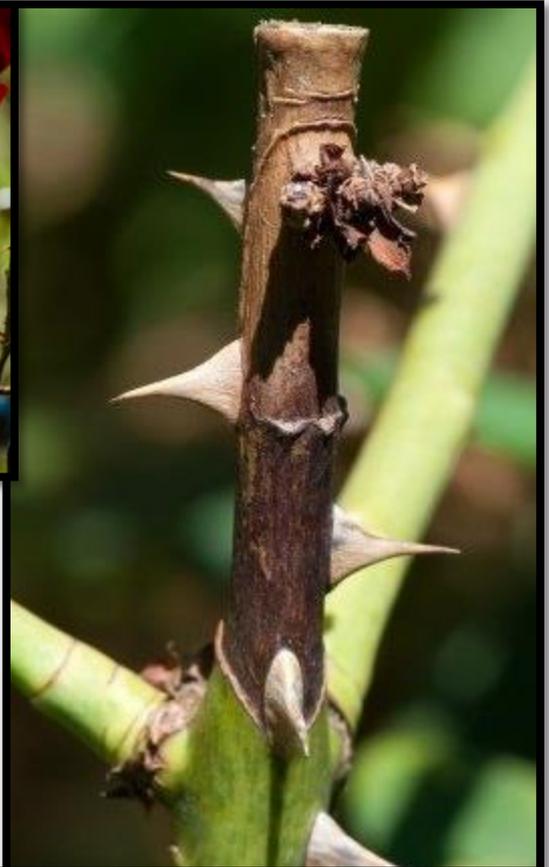


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Diseases

Die back



Diplodia rosarum

Symptoms

Blackening and drying of shoots from tip downward.

Control

- Pruning of dried shoots and pasting of blitox or Bordeaux paste on the cut portions
- Spraying of Copper Oxychloride @0.4%.



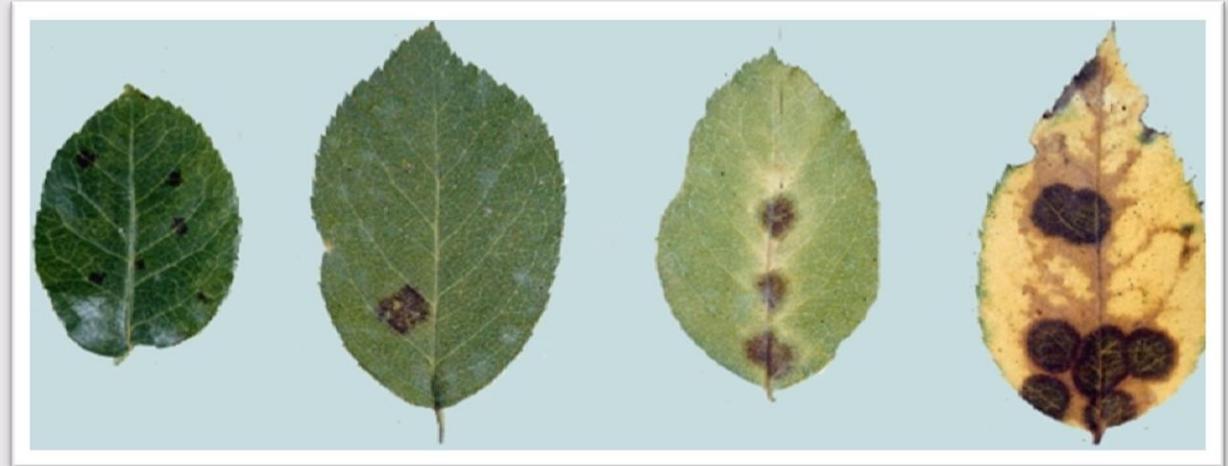


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Black spot

Diplocarpon rosae



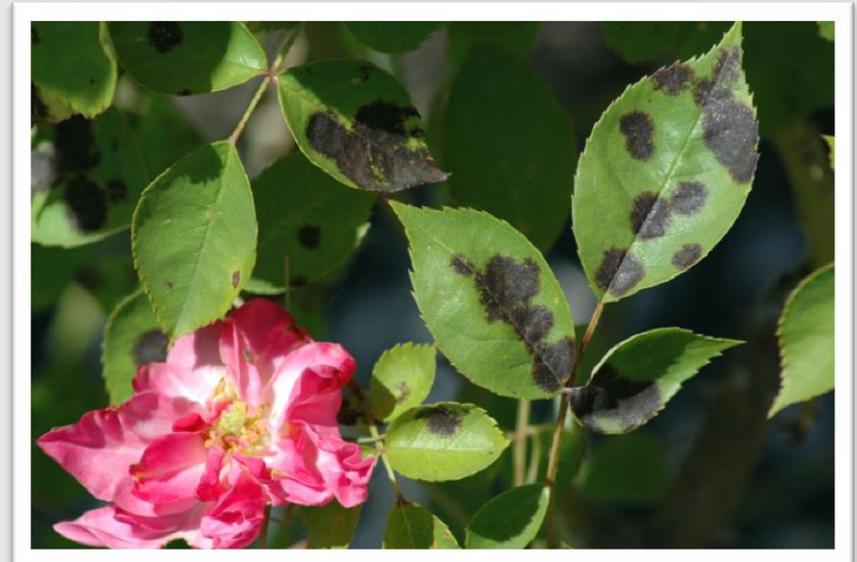
Symptoms

Conspicuous circular black spots with fringed margins, etiolation of leaves and defoliation.

Control

Phyto-sanitary measures like removal of fallen leaves are essential.

ii) Spraying of ferbam @0.2%, or captan @0.2%, or bavistin @0.1%.





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Powdery mildew *Sphaerotheca pannosa*



Symptoms

White powdery patches on all aerial parts.

Control

- Phyto-sanitation.
- Spraying
- of karathane @0.05% or topsin-M @ 0.1%, or bavistin @0.1%, or sulphur 80WP @0.1%.





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Downy mildew

Peronospora sparsa



Symptoms

Cottony growth on lower surface of leaves, light yellow irregular patches on upper surface. Flowers are rotten.

Control

Sanitation in the field
Spraying of Ridomil @0.1% or Copper Oxychloride @0.2%.





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Rust

Phragmidium sp.



Symptoms

Brownish to black pustules,
rusty appearance on leaves.

Control

- Spraying of Vitavax @0.1%
- Use of healthy plantlets
- Phytosanitation

