



**DISEASE OF FIELD AND
HORTICULTURAL CROPS – II**

**SESSION 28 &29
ROSE & MARIGOLD DISEASES**

Important Diseases of Rose

1. Black spot - *Diplocarpon rosae*
2. Die back - *Diplodia rosarum*
3. Powdery Mildew - *Sphaerotheca pannosa*

Black Spot

❖ *Diplocarpon rosae* (T- *Marossonia rosae*)

❖ Symptoms

- **Dark brown tar coloured spots with fringed borders**
- Spots coalesce forming large patches
- Infected leaves turn brown and **defoliate**
- Fungus may also **attack stems and flowers** of rose bushes
- **On stems**, infected areas are blackened with **blistered appearance**

Black lesions on leaves



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Black lesions on leaves



❖ Disease Cycle

- ❖ Primary inoculum
 - Pycnidia or ascospores in crop debris
- ❖ Secondary Inoculum
 - Wind borne conidia

❖ Favourable Conditions

- ✓ Susceptible stages - All stages are susceptible
- ✓ Monocropping
- ✓ Close planting
- ✓ High temperature and high humidity
- ✓ Cloudy weather with frequent rains

❖ Management

- Resistant varieties: Coronado ,Grand opera
- Affected parts should be collected and destroyed
- Shade and extensive irrigation should be avoided.
- Spray Benomyl @0.1% at weekly intervals starting with

Die Back

❖ *Diplodia rosarum*

❖ Symptoms

- Infection starts from the pruned surface of the twigs.
- The infected portion become **brown to dark brown or black**
- Infected **twig dries from tip downwards**
- Infection spreads from twig to main stem and roots and finally whole plant is killed
- **Older plants** and neglected bushes are more frequently attacked

Blackening of Twigs



Die back



❖ Disease Cycle

- ❖ Primary inoculum - Pycnidia in Infected twigs/debris
- ❖ Secondary spread - Conidia

❖ Management

1. Resistant varieties: **Blue moon, Red gold, Summer queen,**
2. Diseased twigs should be carefully removed and destroyed
3. After pruning the cut end should be protected with **chaubattia paste**
4. Spray Mancozeb @0.2% or Chlorothalonil@0.2% in early September and late October

Powdery Mildew

❖ *Sphaerotheca pannosa*

❖ Symptoms

1. The infected leaves show **grayish powdery fungal growth**
2. Rolling of leaf margins with the onset of sprouting season
3. Affected **leaves become curled and distorted**
4. Badly infected flower buds fail to open
5. Infected **floral parts become discoloured**, dwarfed and dried

Powdery Growth on Leaves



Curling of margins



Powdery Growth on buds



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Powdery Growth on Flowers



❖ Disease Cycle

- ❖ Primary inoculum - Mycelium and cleistothecia in dormant buds and shoots
- ❖ Secondary Spread - Conidia

❖ Management

1. Resistant varieties: **Ashwini, Ambika, Surabhi**
2. Collect and destroy infected plant debris
3. Four sprays with wettable S@0.3% or carbendazim@0.1% or Dinocap @0.1% at 10 days interval

Important Diseases of Marigold

1. Botrytis blight - *Botrytis cineria*
2. Leaf spots - *Alternaria, Cercospora, Septoria, etc*
3. Collar rot - *Pythium sp., Phytophthora sp.*

Botrytis Blight

❖ *Botrytis cineria*

❖ Symptoms

- Flowers turn a papery brown **and become covered with gray, fuzzy masses.**
- Senescing flowers are particularly susceptible.
- **Tan to brown spots develop on the leaves.**



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❖ Disease Cycle

- ❖ Primary inoculum
 - Crop debris
- ❖ Secondary Inoculum
 - Wind borne conidia

❖ Favourable Conditions

- ✓ Monocropping
- ✓ Close planting
- ✓ High temperature and high humidity
- ✓ Cloudy weather with frequent rains

❖ Management

- Crop rotation
- Field sanitation
- Foliar spray with chlorothalonil @0.2%

Cercospora Leaf Spot



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