

**Class -3<sup>rd</sup> year**

**Semester- Second semester**

**Course Title- Diseases of Field and Horticultural crops & their Management**

**College of Agriculture – College of Agriculture, Powarkheda**

**Name of Teacher- Dr. Dhananjay Kathal (Plant Pathology)**

## **Topic - Diseases of Rose**

### **1. Black leaf spot- *Diplocarbon rosae***

#### **Economic Importance**

Black spot of rose is a serious problem in hill and cold climate of temperate regions. The disease causes marked reduction in the size and number of flowers.

#### **Symptoms**

Black lesions with feathery margins surrounded by yellow tissue are found on the leaves. Infected leaves drop prematurely. Purple/red bumpy areas on first year canes may be evident. Plants may be weakened due to defoliation and reduced flower production may be observed.



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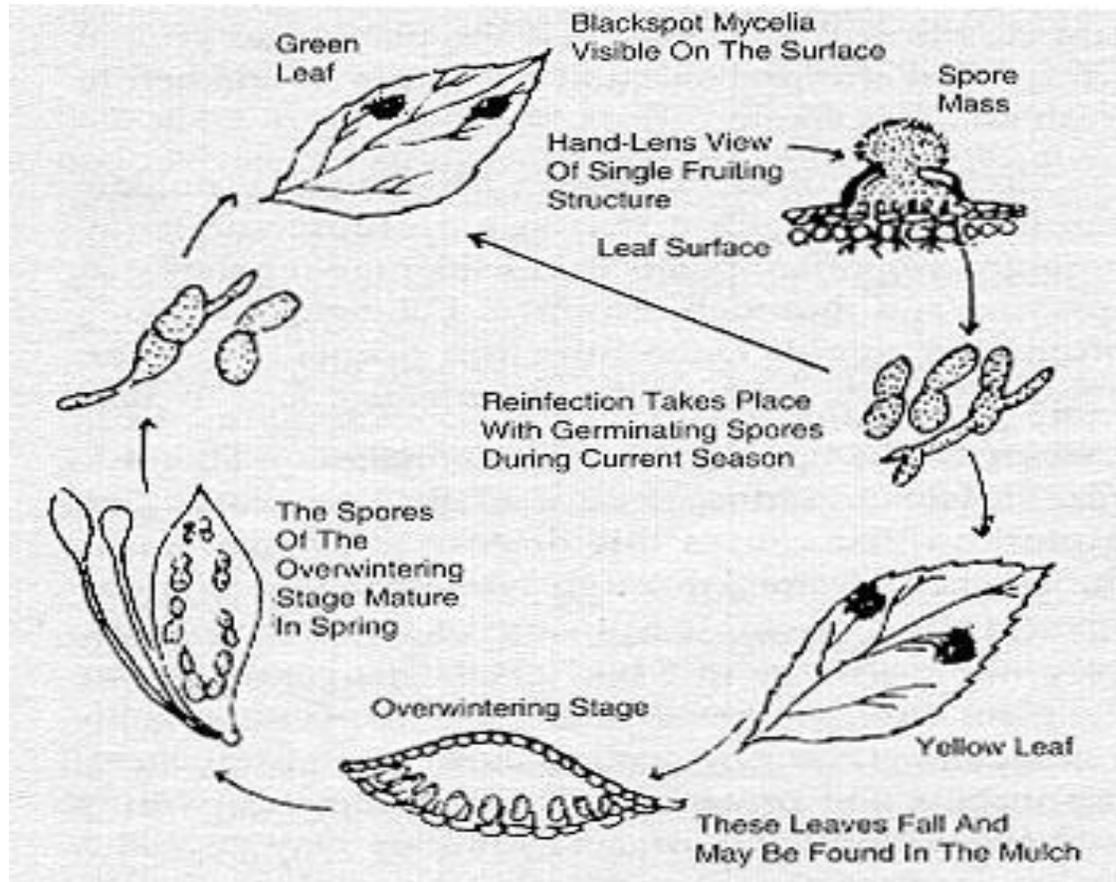
#### **Pathogen**

The vegetative body of the fungus consists of two parts *viz.*, the subcuticular mycelium and the internal mycelium. The fungus produces acervuli on the central part of the tar spots as blister like projections. Asci are discoid, sub epidermal, erumpent and 84 to 224 micron meter in diameter. Stroma is thin. Conidiophores are hyaline short and cylindrical. Conidia are hyaline, two celled, fusiform or allantoid to obclavate, upper end round, base narrow, guttulate, 18 – 25 x 5 – 6 micron meter.

#### **Mode of spread and survival**

The fungal spores are spread primarily by splashing rain or water. Germination of the spores and infection occur when free water remains on the leaf surface for a period of 6 hours or longer. Leaf spots develop within 5 to 10 days.

## Disease Cycle



## Management

Cultural-Roses should be planted where the sun can quickly dry the night's dew. Space roses far enough apart for good air circulation. Avoid overhead watering and keep foliage as dry as possible. Remove infected canes and burn diseased leaves. Spraying with Mancozeb (or) Chlorothalonil 0.2% (or) Benomyl 0.1% or a copper dust .

## 2. Powdery mildew – *Sphaerotheca pannosa*

### Economic Importance

It is one of the widely distributed disease of rose. Powdery mildew is prevalent during Oct – Jan in south India and Dec- Feb in North India.

## Symptoms

The symptom appears as grayish-white powdery substance on the surfaces of young leaves, shoots and buds. Infected leaves may be distorted, and some leaf drop may occur. Flower buds may fail to open, and those that do may produce poor-quality flowers. It can occur almost anytime during the growing season when

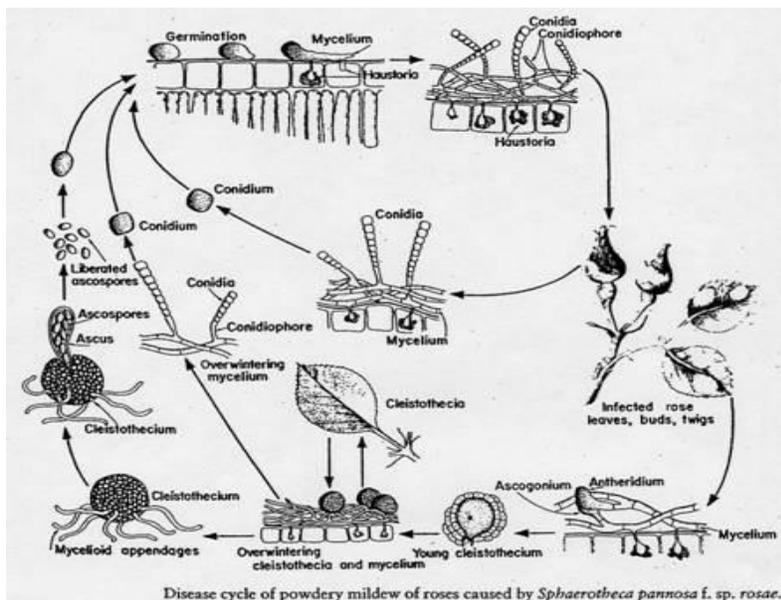


temperatures are mild (70 - 80 °F) and the relative humidity is high at night and low during the day. It is most severe in shady areas and during cooler periods.

## Pathogen

Mycelium is white, septate, ectophytic and sends globose haustoria into the epidermal cells of the host. Conidiophores are short and erect. Conidia are one celled, oblong, minutely verrucose with many large fat globules and 22.5 – 29.0 x 12.9 to 14.5 micron meter. Cleistothecia are formed towards the end of the season on the leaves, petals, stems and thorns. Cleistothecia are with simple myceloid appendages. Each ascus contains eight ascospores.

## Disease Cycle



### **Mode of spread and survival**

The fungus over winters as mycelium in dormant buds and shoots which are not entirely killed. Either conidia or ascospores serve as primary inoculum. The secondary spread is through wind borne conidia.

### **Management**

Collection and burning of fallen leaves. Spray with Wettable sulphur 0.3% (or) Dinocap 0.07% (or) Carbendazim 0.1% 2-3 sprays at 15 days interval is effective. Sulphur dust at 25 kg/ha. Use of sulphur at higher temperature conditions will be phytotoxic.

## **3. Die back – *Diplodia rosarum***

### **Economic Importance**

In India it was first reported in 1961 from Delhi. Now it occurs in all the rose growing areas.

### **Symptoms**

Drying of twigs from tip down wards. Blackening of the twigs. The disease spreads to root and causes complete killing of the plants.

### **Pathogen**

The fungus produces round, black pycnidia which bear spores. The pycnidiospores are dark coloured and two celled. Perithecia are immersed in the host tissue and are surrounded by a pseudostroma. Ascospores are ellipsoidal or fusoid, hyaline, two celled with the septum in or near the middle.

### **Mode of spread and survival**

The fungus persists in dead twigs and the stalks of the withered blooms.

### **Management**

Pruning should be done so that lesions on the young shoots will be eliminated. Apply chaubatia pastic in the pruned area. Spray with COC 0.2% (or) Difolatan 0.2% (or) Chlorothalonil 0.2% (or) Mancozeb 0.2%

**JNKVV - COLLEGE OF AGRICULTURE, POWARKHEDA, HOSHANGABAD (M.P)**  
**Subject:- Diseases of field crops and Horticultural crops & their management- II**  
**B. Sc. (Ag) Third Year 2019-20**

S.No.	Enrollment No	Student Name	Assignment topic
			3rd year 2nd semester
1	160801017	Khum Singh Dawar	Wheat: Powdery mildew and alternaria blight
2	160801024	Manju Rawat	Wheat: Loose smut, Karnal bunt
3	160801026	Nidhi Bhalavi	Wheat: Stem rust, Yellow rust and Brown rust
4	170801001	Neelu Sharma	Wheat: Ear cockle and Chickpea: Wilt
5	170801002	Aanand	Sugarcane: Red rot and Smut
6	170801003	Anand Mewada	Sugarcane: wilt and PokkahBoeng
7	170801004	Anil	Sugarcane: Grassy shoot and ratoon stunting
8	170801005	Anil Panwar	Sunflower: Sclerotinia stem rot and Alternaria blight
9	170801006	Aqsa Sheikh	Safflower: Rust
10	170801007	Arun Gunwan	Mustard: Alternaria blight
11	170801008	Balu Singh Chouhan	Mustard: White rust
12	170801009	Bhimsingh Jamre	Mustard: Downy mildew and Sclerotinia stem rot
13	170801012	Govind Rajput	Linseed: powdery mildew and Alternaria blight
14	170801013	Jayesh Gehlot	Chickpea: Dry and wet root rot
15	170801015	Kamal	Chickpea: Ascochyta blight and grey mould
16	170801016	Kamlesh Patel	Lentil: Rust and wilt
17	170801017	Nirmal Kadam	Pea: Downy mildew, powdery mildew
18	170801018	Nitesh Narre	Pea: Rust
19	170801019	Pankaj	Mango: Anthracnose, malformation
20	170801020	Pooja Maran	Mango: Bacterial blight and powdery mildew
21	170801021	Pooja Patel	Citrus: Canker and gummosis
22	170801022	Pooja Patil	Grape vine: Downy mildew and powdery mildew
23	170801024	Prashantam Gour	Grape vine: Anthracnose
24	170801025	Prerna Soni	Apple: Scab and powdery mildew
25	170801026	Pushpendra Birla	Apple: Fire blight and crown gall
26	170801028	Rahul	Peach: Leaf curl; Strawberry: leaf spot
27	170801029	Rajdeep Patel	Potato: Early and late blight
28	170801030	Rakesh Yadav	Potato: Black scurf, leaf roll,
29	170801031	Rameshwar Patil	Cucurbits: Downy mildew
30	170801032	Ravi Kushwah	Onion and garlic: Purple blotch and Stemphylium blight
31	170801033	Rohit Mansare	Chillies: Anthracnose and fruit rot
32	170801034	Sachin Parmar	Chillies: leaf curl
33	170801035	Sangeeta Mandloi	Turmeric: Leaf spot
34	170801036	Sarita Alawe	Coriander: powdery mildew
35	170801037	Sharad Lodhi	Marigold: Botrytis blight
36	170801038	Shivam	Rose: powdery mildew and black leaf spot

37	170801039	Shivam Patel	Rose: Dieback,
38	170801040	Shivani Jaiswal	Coriander: Stem gall
39	170801041	Shivraj Singh Chouhan	Chillies: Wilt
40	170801042	Soniya Sisodiya	Cucurbits: powdery mildew
41	170801043	Sonu Jhala	Cucurbits: wilt
42	170501005	Ankit Makawane	Potato: mosaic
43	170101104	Surbhi Tiwari	Linseed: Rust

Name of Teacher - Dr. Dhananjay Kathal  
(Assistant Professor, Plant Pathology)