ANTHRACNOSE AND FRUIT ROT OF CHILLI

Pathogen: *Colletotrichum capsici*

Systematic position of pathogen: Sub Div.: Deuteromycotina, Class: Coelomycetes, Order: Melanconiales, Family: Melanconiaceae.

Distribution and Importance: Anthracnose of chilli is one of the major economic constraints to chilli production worldwide, especially in tropical and subtropical regions. Anthracnose of chilli was reported for the first time in 1913 from Coimbatore, India. This disease is commonly found in Andhra Pradesh, Maharashtra, Tamil Nadu and Karnataka States of this country. This is one of the worst diseases of this crop, and found in severe condition in all the States of South India. In India, a calculated loss of 10–54% has been reported in yield of the crop due to the anthracnose disease.

Symptoms: The disease symptoms appears on leaves, stem and also on the fruits. The symptoms appear on the leaves as small brown or black water soaked spots which are surrounded by light brown or yellow hallow margin. These spots were small at first, develop larger and get coalesced with each other to form a large lesion. Symptoms on the stem were brown spots leads to necrosis of twigs which finally ends up in die back of the plants at severe situation. Acervuli were found on the necrotic surface of the twigs. At various stages of growth die back occurs in plant. Die back symptom begins from the tip of the plants branches and finally reach downwards results in the progressive death of the branch. Rotting and fruit spotting occurs in ripe chilli with formation of acervuli in concentric rings, sunken necrotic tissues and coalesced lesion. Usually circular and sunken lesions with black margins appear on the ripe fruits. A pinkish mass of fungal spores covers the sunken spot. In the advanced stage of the disease, the concentric markings with dark acervuli appear on affected parts. The spotted fruits drop down prematurely, and heavy losses are resulted. The fruit become wrinkled, deformed, shrivelled and dried when it is affected completely

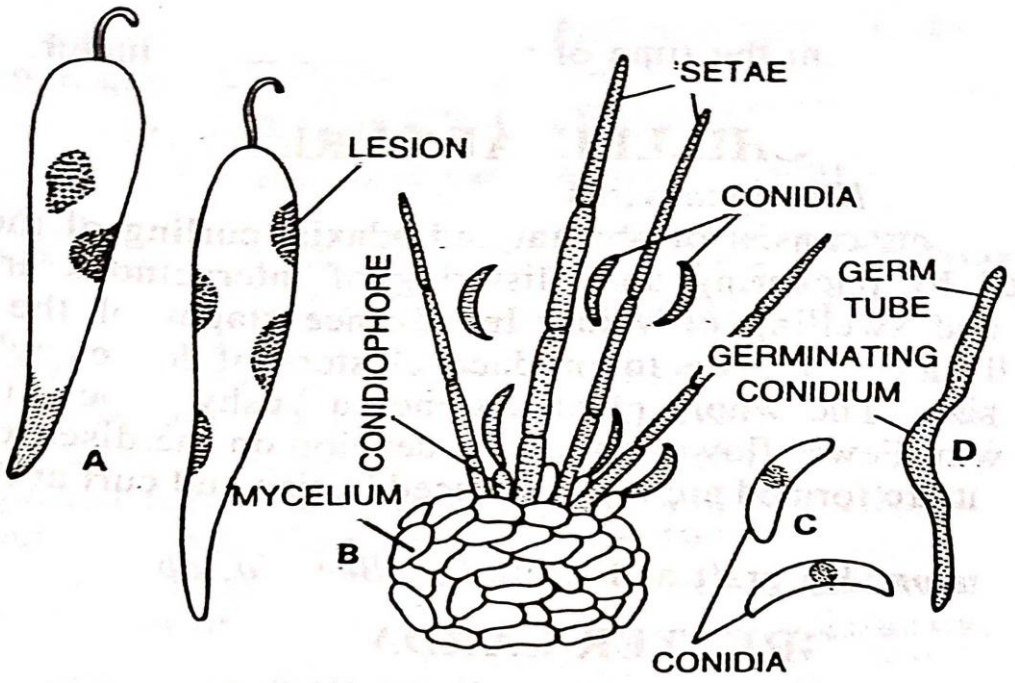
The Pathogen: This disease of chilli is caused by an imperfect fungus *Colletotrichum capsici*. The fungus is restricted on the surface of infected fruits. The black dot-like acervuli are seen in these lesions. From the hymenial layer of acervulus, the short, hyaline conidiophores are produced. The conidiophores bear falcate conidia, measuring 11 to 24 by 4 to 5.5 u. The dark-coloured needle-like septatte setae also arise from the hymenium of the acervulus. Each conidium contains a centrally placed oil-globule. The conidia germinate and produce thin, hyaline germ tubes. The appressoria are formed on the tips of germ-tubes.

Disease cycle: This is an externally seed-borne and air borne disease. The favorable temperature for the disease is 27°C with relative humidity 80% and a soil pH 5-6. Initial disease is induced by the spores of *Colletotrichum capsici* which survive in and on seed in the form of acervuli and microsclerotia. The fungus also survives in the soil for a long time. The primary infection takes place

by means of conidia, which are carried from one place to another by windblown rains during rainy season.

Management:

1. **Cultural Practices:** These are the precautionary measures. They are implemented to reduce the rate of infection and minimize the inoculum pressure. As this pathogen is seed, air and water borne the cultural practices should focus on various cultural practices such as crop rotation, proper drainage, deep ploughing and weeding.
2. Usage of disease free seeds – Disease free seeds should be used to raise the chilli seedlings in the nursery or field.
3. Usage of resistant varieties
4. Prior to sowing the seeds should be treated with organo- mercuric compounds.
5. The secondary infection may be checked by sprayings of Mancozeb (0.2%), Ziram (0.1%), Copperoxychloride (0.2%), Difenoconazole (0.025%), Propiconazole (0.1%) and Carbendazim (0.1%).



Anthracnose of chilli (*Colletotrichum capsici*).