POWDERY MILDEW OF CUCURBITS

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B.Sc sem-II, Paper2

Title of the Paper- Mycology and Phytopathology

POWDERY MILDEW OF CUCURBITS

Pathogen:*Erysiphe cichoracearum* DC.

Systematic position of pathogen:

Sub-division-Ascomycotina

Class- Pyrenomycetes

Order-Erysiphales

Family-Erysiphaceae.

Genus*Erysiphe*

Species- *cichoracearum*

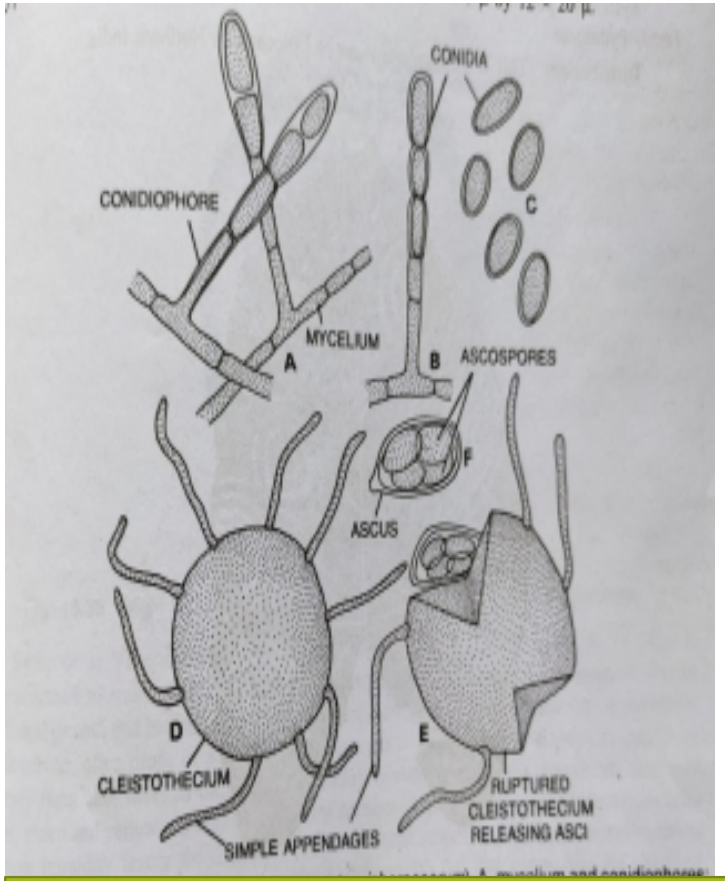
Distribution: This disease is world-wide in distribution. In India, this is one of the commonest diseases of cucurbits and is generally serious during dry seasons.

Symptoms: The disease appears as a white powdery coating over the leaves and stems of the affected plants. The affected leaves lose their green appearance and become pale dry and wither off. The leaves become distorted and the diseased areas are noticeable by their lighter colour. The fruit size and yield is very much reduced .

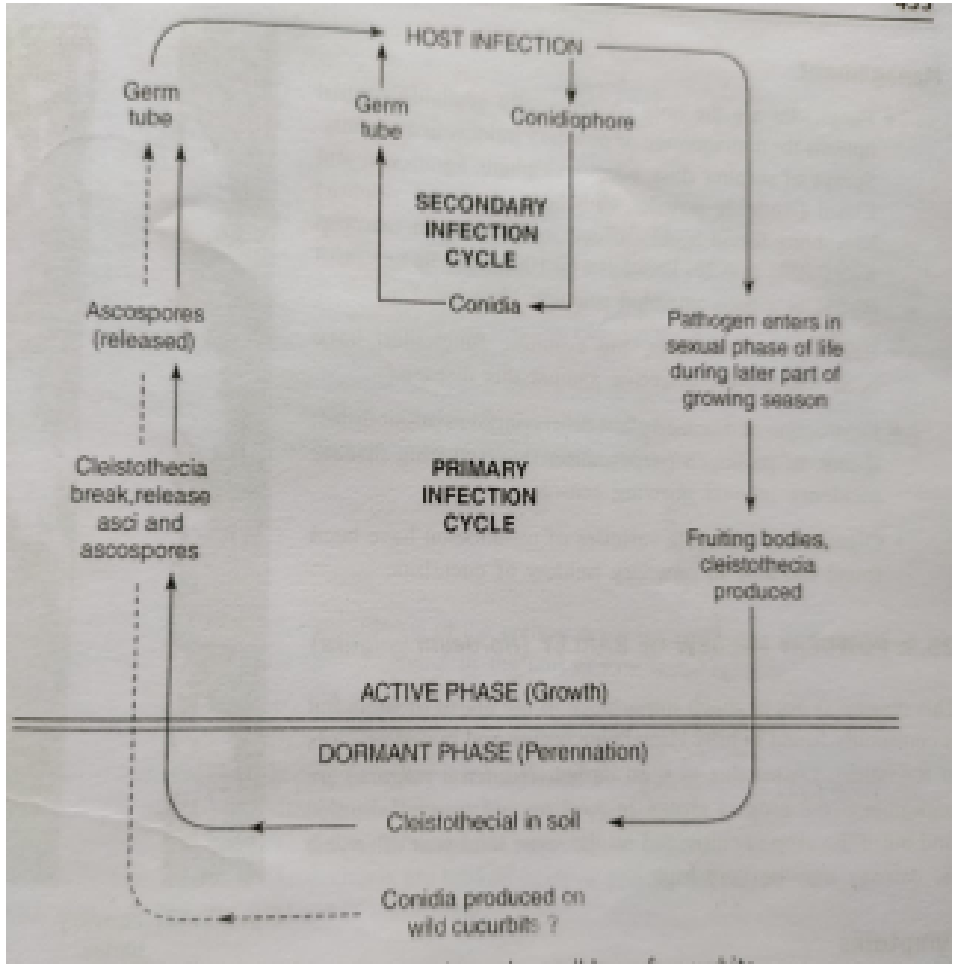
The pathogen-*Erysiphe cichoracearum*

The powdery mildew of cucurbits is caused by an ascomycetous fungus*Erysiphe cichoracearum* . The fungus produces conidia. The mycelium is superficial except for the haustoria which penetrate the host cells and absorb food material from them. Conidiophores are short, unbranched and bear chains of oblong conidia at apex,conidia are barrel shaped measuring 24 to 30 15 to 20u

Later on, the cleistothecia are formed. The cleistothecia remain scattered on the host surface. They are dark coloured, spherical with thick walled appendages, measuring 80 to 140 u in diameter. Each cleistothecium contains many sub-cylindric asci. Each ascus measures 60 to 90 x 30 to35 p. Each ascus contains 2 to 4 ascospores, measuring 20 to 28 by 12 x 20 u



Erysiphe cichoracearum



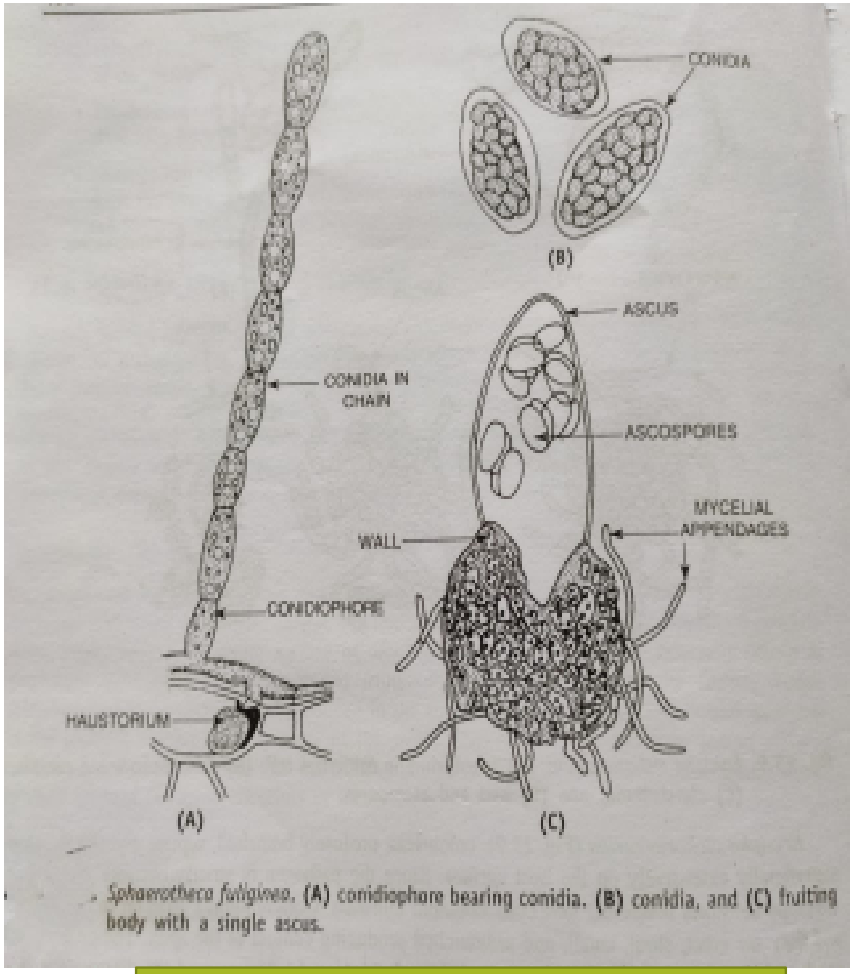
Disease Cycle-This is a soil-borne disease. The cleistothecia survive the off-season along with plant debris in the soil. When suitable host plants becomes available, the ascospores germinate and cause fresh infections. The conidia are responsible for secondary infection. Since the fungus has a wide host range, it can perpetuate also in the form of conidia.

Disease Cycle have 2 phases

1. Perennation and Primary infection
2. Secondary infection

There are many countries where the disease is reported to be caused by either *Erysiphe cichoracearum* or *Sphaerotheca fuliginea* , but there are countries including India wherein the disease has been found to be caused by both fungal pathogens simultaneously.

Sphaerotheca fuliginea pathogen bears almost identical features during its vegetative and asexual (conidial) stages of growth when compared to its counterpart, Erysiphe.The major point where it differs from that of Erysiphe is the sexual stage. *S. fuliginea* produces cleistothecia each containing only one ascus, which is broadly elliptic to subglobose measuring 50-80 x 30-60 um. Each ascus contains eight ascospores and each ascospore is ellipsoid to nearly spherical.



Sphaerotheca fuliginea

Control Measures (Disease Management)

1. The dusting of powdered sulphur has been proved quite effective to control the disease.

2. The dusting is being done once or twice during the season. Besides sulphur dust, copper sulphate
and karathane have also been found effective.

3.Spraying of crop with 0.05 to 0.2% karathane 1000 1/ha is recommended.

4.Elosal (wettable powder with 80% sulphur) also provides effective control.

5.The resistant varieties should be grown.