

Subject-Botany

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Class-1 year

Paper-1(Diversity of virus, Bacteria and Fungi)

Topic- Cercospora: Genus and Reproduction / Fungi Imperfecti

Systematic Position

Kingdom- Mycota

Division -Eumycota

Sub-division- Deuteromycetes

Class- Hyphomycetes

Order- Moniliales

Family- Dematiaceae

Genus- *Cercospora*

Habit and Habitat of Cercospora:

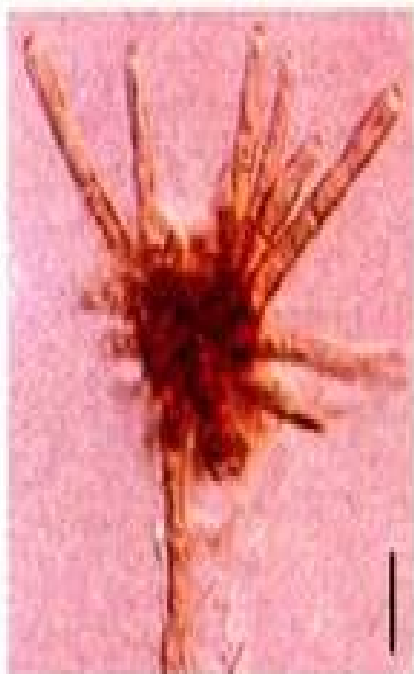
Cercospora is a very large genus of family Dematiaceae. It includes about 3800 form-species. Majority of the species are parasitic and cause leaf spot or tikka disease of

of higher plants of economic value .

Commonly the leaf spot disease is called the tikka disease. *C. personata* and *C. arachidicola* are the two commonly known form-species which are responsible for the leaf spot (tikka) disease of groundnut (*Arachis hypogea*).

Symptoms of Cercospora:

The infection begins as pale green spots on the upper surface of the leaf. These spots gradually enlarge, turn brown in colour and ultimately entire leaf dries and Crumbles down (Fig. 1).



Cercospora - acervulus



Cercospora arachidicola on ground nut leaf



Tikka Disease of Groundnut

Fig. 1

Mycelium of Cercospora:

The mycelium in many species (*C. personata*) is entirely internal. The hyphae ramify in the intercellular spaces between the mesophyll cells of the host leaf obtaining nutrition by sending branched haustoria into the spongy and palisade cells.

In some form species (*C. arachidicola*) the mycelium consists of both external and internal hyphae. The latter in the beginning are intercellular but later on become intracellular. They do not produce haustoria.

Before the mycelium enters the reproductive phase, the hyphae accumulate and become compacted to form brown to black globular mass of hyphae, the stroma immediately beneath the epidermis of the host leaf in a substomatal cavity

(Fig. 16.11 B).

Reproduction in Cercospora :

Asexual reproduction :

It takes place by means of long, cylindrical usually hyaline, multiseptate conidia (C) which are abstricted successively at the tips of unbranched, dark conidiophores (B)

The latter arise in tufts from a stroma lying in a substomatal cavity and emerge by rupturing the overlying epidermis. The conidiophores are geniculate (Knee-jointed) and 1-2 septate. The conidium, as it falls off, leaves a scar on the conidiophore.

The conidia are disseminated by wind or rain splash. Under suitable conditions (24-28°C temperature) conidia germinate by giving rise to one or more germ tubes.

Each germ tube develops into a new mycelium.

The perfect stages of *C. arachidicola* and *C. personata* are

Mycosphaerella arachidicola and *M. berkeleyi* respectively.

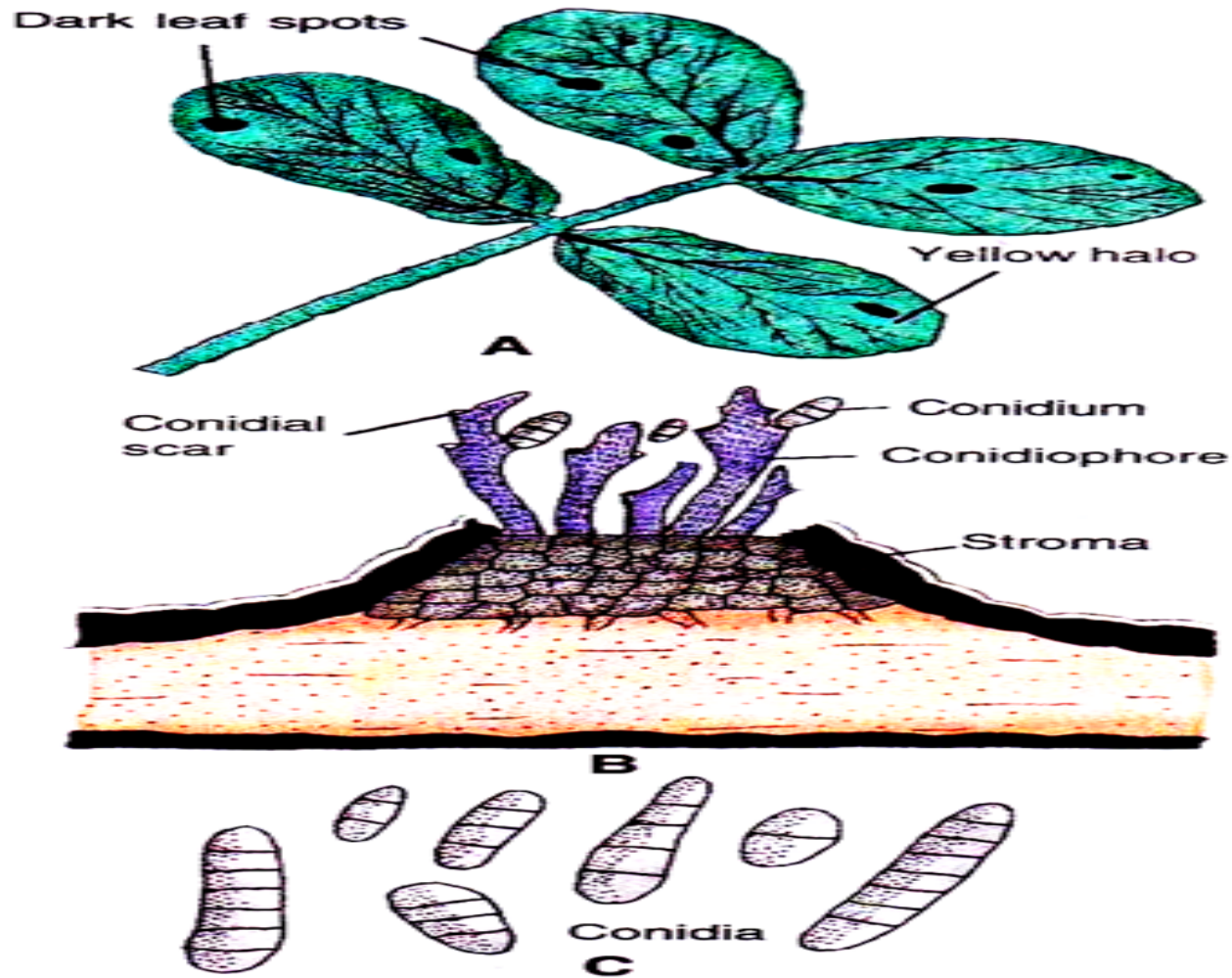


Fig. 16.11 (A-C). *Cercospora* sp. A, Leaf spots on the leaflets of *Arachis hypogaea*; B, L.S. acervulus with the geniculate conidiophores emerging; C, conidia.