

## 7.3. ALTERNARIA

	Alexopoulos	Ainsworth	Modern
Kingdom	– Plantae	Fungi	Kingdom – Fungi
Division	– Mycota	Eumycota	Phylum – Ascomycota
Subdivision	– Eumycotina	Deuteromycotina	Subdivision – Pezizomycotina
Class	Deuteromycetes	Hyphomycetes	Class – Dothideomycetes
Order	– Moniliales	Moniliales	Subclass – Pleosporomycetidae
Family	– Dematiaceae	Dematiaceae	Order – Pleosporales
			Family – Pleosporaceae

*Alternaria* species are ubiquitous in the environment and constitute a part of the natural fungal flora almost everywhere. Many species of *Alternaria* are pathogenic in plants and also cause human health disorders. There are 299 species of *Alternaria*. At least 20% of agricultural spoilage is caused by *Alternaria* species. The important species that cause disease in plants are:

- A. alternata* – causes early blight of potato, leafspot in *Withania somnifera*.
- A. solani* – causes early blight in potatoes and tomatoes.
- A. triticinae* – causes leaf blight of wheat.
- A. brassicae* – causes grey leaf spots of brassicas.
- A. brassicicola* – causes dark leaf spots of brassicas.

The species are facultative parasites, so affect large number of hosts. They cause human health disorders and grow on mucous membrane. The disease is known as **alternariosis** and **alternariatoxicosis**.

They are normal agents of decay and decomposition. Some species are prospective as biocontrol agents.

(A) **Mycelium:** The mycelia are branched, septate but short and not extensive. Branches may be inter or intracellular, endophytic, light brown in colour.

(B) **Reproduction:** The main method of reproduction is asexual. The sexual reproduction and formation of asci have not been found out so the perfect stage of *Alternaria* is yet to be seen.

(a) **Asexual Reproduction.** They multiply asexually by formation of spores. The conidiophores are aerial and septate. They are similar to the normal hyphae. Fig. 7.1.

Conidia are produced at the tips of these conidiophores. Each hypha acting as conidiophore produces a single conidium at its tip. The conidia are large, dark in colour, multicelled and beaked. There are transverse as well as vertical septa in the conidia. Sometimes conidia are borne end to end upto 3 to 4 conidia.

Conidia are wind disseminated. On suitable substratum or host (if parasitic species) the conidia germinate by germ tubes from each cell of the multicelled conidium.

The disease cycle of the fungus causing early blight of potato is given in the pathology chapter of this book.



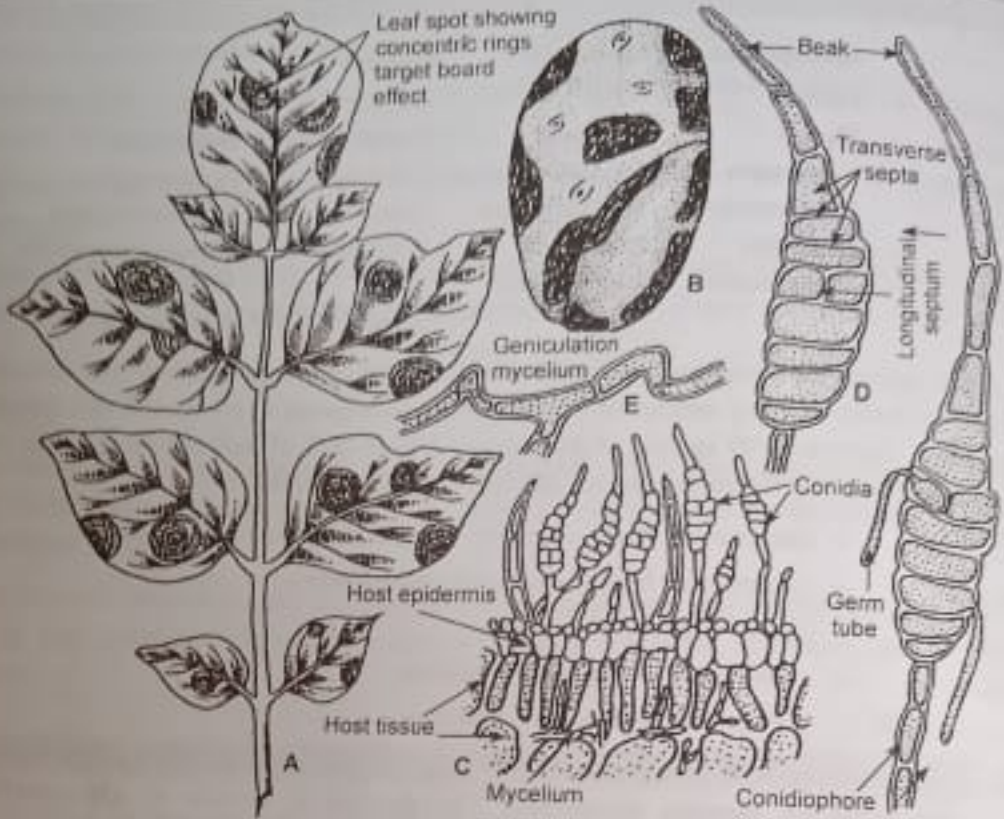


FIG. 7.1. *Alternaria solani*. Early blight of potato. A—affected leaf; B—affected tuber; C—section of infected leaf showing mycelium, conidiophores and conidia; D—conidium and germinating conidium; E—mycelium.

## 7.4. COLLETOTRICHUM

### 7.4.1. Systematic Position

#### Aonsworth(1966)

Kingdom	— Fungi
Division	— Eumycota
S. Division	— Deuteromycotina
Class	— Coelomycetes
Order	— Melanoconiales
Family	— Melanoconialaceae
Genus	— <i>Colletotrichum</i>

#### Modern System

Kingdom	— Fungi
Phylum	— Ascomycota
Class	— Sordariomycetes
Order	— Incertae sedis
Family	— Glomerellaceae
Genus	— <i>Colletotrichum</i>
Species	— <i>C. gloeosporioides</i> (anamorphic form)
Teleomorph	— <i>Glomerella singulata</i>