

Q. Describe the systematic position, occurrence, structure, symptoms, reproduction and control of ALTERNARIA. (Early blight of Potato)

Systematic Position →

Class - Deuteromycetes

Sub class - Hypomyces

Order - Moniliales

Family - Dermatiaceae

Genus - Alternaria

species - solani

Occurrence → It is common, saprophytic, imperfect fungi which occurs universally but some are parasite, where *Alternaria solani* is an endophytic endoparasite of Potato and Tomato plants causing early blight disease of Potato and other members of Solanaceae family. It is found on dead or decaying parts of plants in soil from where the conidia contaminate cultures in laboratory by wind.

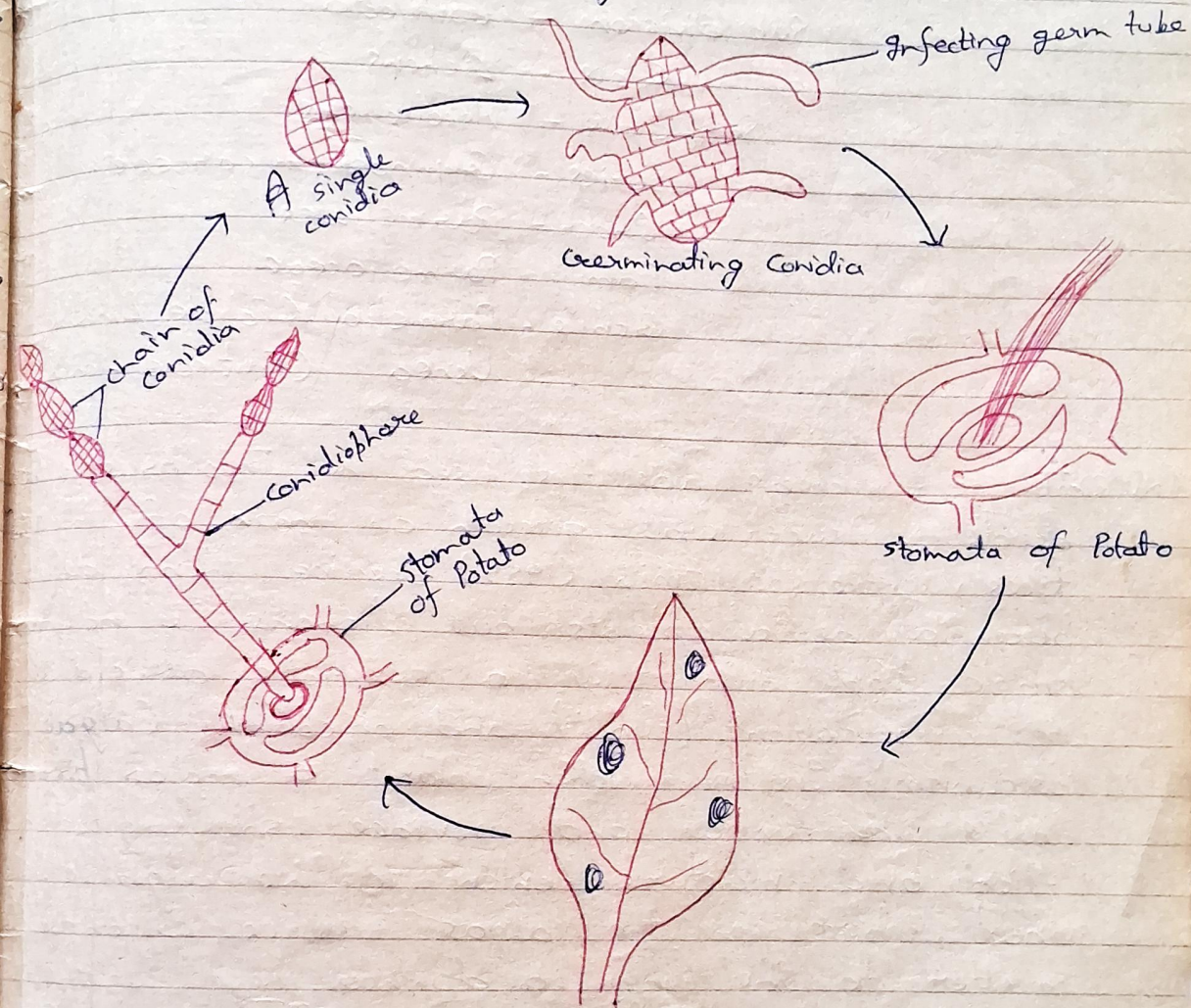
Structure → The vegetative parts or mycelium of fungi (*A. solani*) is septate, short, branched, intracellular or intercellular, light brown or darker in colour and multinucleate.

Symptoms → About 1 month of sowing the disease first appears as pale brown spots scattered on the lower leaflets and gradually increases on upper leaflets also. The infected leaflets carry oval or angular brown spots having concentric rings and each of such spots is encircled by chlorotic area. The infected leaflets soon may dry and drop off and enzyme alternaric acid is secreted by the pathogen which causes leaf infection of Potato or Tomato. In potato, tuber dark, sunken, circular may appear and also the tuber becomes brown and crackly. This ring in moist condition are darkened with conidio-phore or conidia.

Reproduction → *Alternaria* reproduces only by asexual with the help of conidia. The conidia are produced at the tip of short, dark hyphae known as conidio-phore. Each conidia is large, multicellular septate, beak like, brown and develops in chain or single. The number of cells varies in each conidia from 8 to 15 or even more. The septa dividing the spores into cells are both transverse and vertical and their number is not fix. Due to environmental condition which is known as dictyospore (Tandon and Shrivastava 1957).

Matured conidia reproduce easily from conidial chain and are blown away by air. In case of saprophytic species the conidia germinate directly in soil and if parasite they germinate into plant. So they

are in compact with host cell or soil in suitable temperature and moisture, germinate soon in order to initiate fresh infection. The conidial germination is direct either by one or more germ tube which infect the healthy host through stomata.



REPRODUCTION IN CONIDIA

Controls →

- ① By rotation of crops.
- ② By the use of resistant varieties.
- ③ Complete eradication of wild plant.
- ④ Eradication of diseased plants.
- ⑤ Uses of copper dust to check the disease.
- ⑥ spraying of fungicides like boradex mixture.