

Study of lichens

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Types of Lichens

A)Crustose lichens –

- ▶ The crustose lichens are hard, granular crusts on rocks & bark of trees.
- ▶ These attached very closely and firmly to the substratum.
- ▶ The thalli are partially or completely embedded in the substratum.
- ▶ The structure is generally divided into polygonal areas called areolae.
- ▶ Ex. Graphis
- ▶ Lecidea



**Crustose -
Ex. Lecidea**

B) Foliose lichens-

- ▶ The foliose lichens have a leaf like, lobed or deeply incised thallus.
- ▶ It is attached to the substratum only at certain points by rhizines.
- ▶ Rhizines are rhizoid like outgrowth which arise from under surface.
- ▶ The thallus may be attached to the substratum either by a single rhizine or by several rhizines.
- ▶ The thallus is generally grayish or brownish in colour.
- ▶ Some small ,hard dark and gall like outgrowths are present on thallus called cephalodia.They help to retain moisture.
- ▶ Ex.Parmelia



Foliose lichens -Ex Parmelia

C)Fruticose lichens-

- ▶ These appear shrubby with cylindrical, flat or ribbon like body.
- ▶ It is upright, generally branched and pendulous.
- ▶ It is attached to the substratum by rhizoids like structures forming a disc.
- ▶ Ex. Usnea



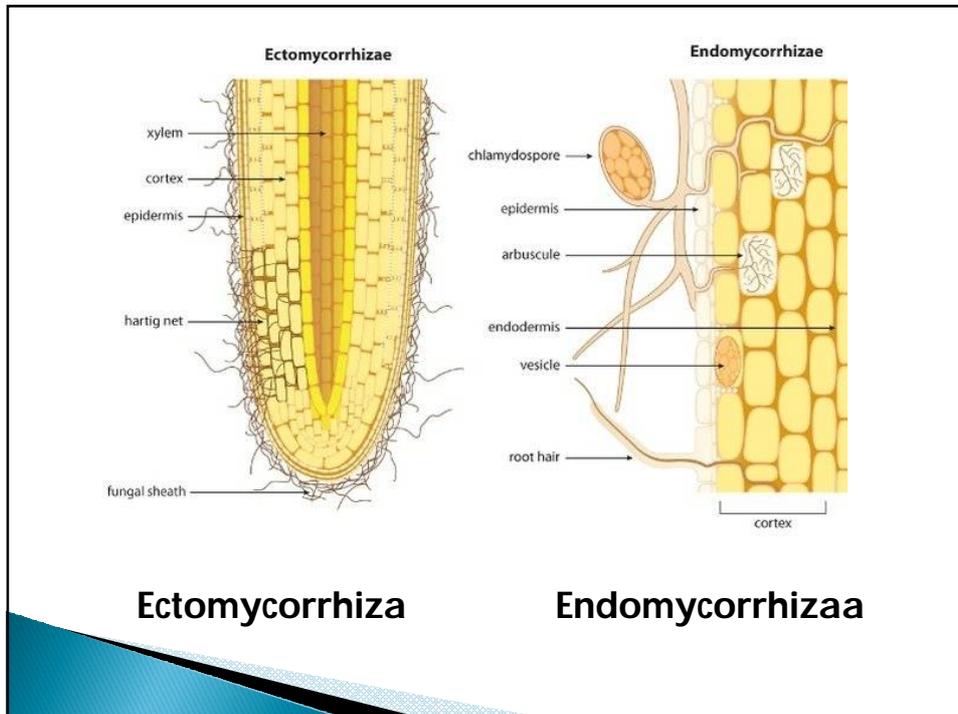
**Fruticose-
Ex Usnea**

Study of Mycorrhiza

- ▶ A symbiotic association between green plant and fungus.
- ▶ Located in the roots of plants of some families like Brassicaceae & Chenopodiaceae.
- ▶ Mycorrhiza plays important role in soil biology and soil chemistry.

Types of mycorrhiza

- ▶ Mycorrhiza are commonly divided into ectomycorrhiza and endomycorrhiza.
- ▶ **Ectomycorrhizal fungi**- Ectomycorrhizal fungi do not penetrate the cell within the root.
- ▶ In ectomycorrhizal association, the fungus forms a sheath over the surface of fine lateral roots of the host trees and sends some hyphae into the intercellular spaces of the outer cortex.
- ▶ They are of great importance in afforestation.
- ▶ They have a greater ability to absorb nutrients from soil.
- ▶ Trees with ectomycorrhizal association are capable of growing better under nutrient deficient condition.



Endomycorrhizal fungi-

- ▶ The hyphae of endomycorrhizal fungi penetrate the cell wall and the cell membrane.
- ▶ Endomycorrhizal association are found in almost all groups of higher plants.
- ▶ Endomycorrhizal fungi enter into the root cells and are generally restricted to cortical region rarely crossing the endodermis.