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Bio 102

### **Importance of Fungi to man include:**

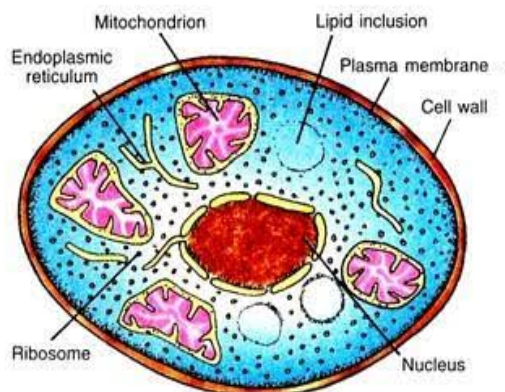
1. fungi maintain soil fertility
2. fungi are used as decomposers
3. Fungi can also be consumed as food by man
4. Fungi can be used as test organism in labs
5. Fungi react with plants mycorrhiza which is found on the root of plants

### **Cell structure of a fungi**

Fungi are eukaryotes and have a complex organization. As eukaryotes, fungal cells contain a membrane-bound nucleus where the DNA is wrapped around the histone proteins. A few types of fungi have structures comparable to bacterial plasmids (copies of DNA). Fungal cells also contain mitochondria and a complex system of internal membranes, including Endoplasmic reticulum and Golgi apparatus. There is no chlorophyll or chloroplast. Fungi also possess cellular pigments.

The rigid layers of Fungal Cell Walls contain complex polysaccharides called chitin (found in the exoskeleton which gives structural strength to the cell walls of fungi) and glucans.

Fungi have a plasma membrane similar to eukaryotes except that the structure is stabilized by ergosterol which replaces cholesterol.



**Fig. 1.8.** Fungi. Fine structure of *Torula* Yeast cell based on an electron micrograph.

### **3. Reproduction in filamentous form of fungi**

Hyphae, which is the filamentous form of fungi, reproduces by releasing quantities of spores. Spores may be produced either directly by asexual methods or sexually.

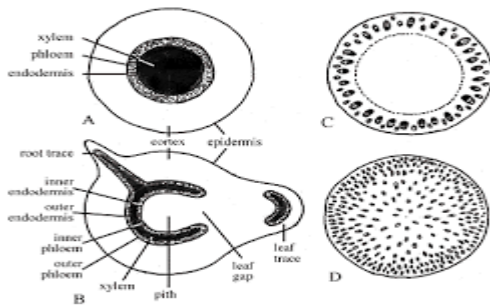
Sexual Reproduction consists of three sequential stages; Plasmogamy, karyogamy and meiosis. While asexual it can be done through budding and fragmentation.

4.

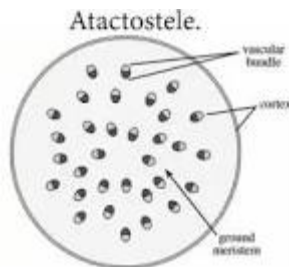
Bryophyte survive with the waxy cuticle which help protect the plants tissue from dying out and the mentangia which provide further protection against drying in certain plants gametes.

5.

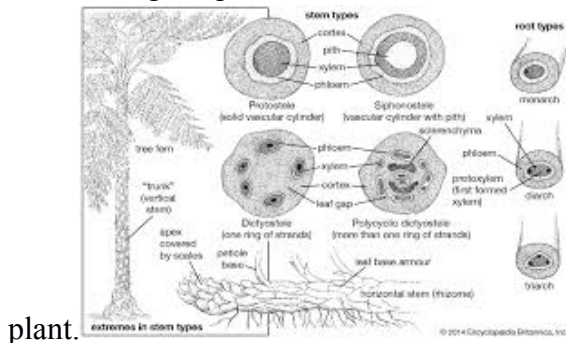
Eusteles: A type of siphonostele in which the vascular tissue in the stem forms a central ring of bundles around a pith. Monoclydons exhibit this.



Atactostele: A type of eustele, found in monocots, in which the vascular tissue in the stem exist as scattered bundles.



Siphonostele: A stele in which the vascular tissue is in the form of a cylinder surrounding the pith, as in the stems of most ferns and other seedless vascular



6.

Life cycle of a Fern: the life cycle has two different stages; sporophyte, which releases spores, and gametophyte, which releases gametes. Gametophyte plants are haploid, sporophyte plants diploid. This type of life cycle is called alternation of generations.

The diagram below explains the life cycle

