

Kingdom : Fungi

Fungi: Eukaryotic organisms, structure **Thallus** , spread in different places in wet soil and dry in the fresh and salt water in the air and attacked many of them plant, animal and human also used some of them as a food and is one of the micro-organism-free chlorophyll so fungi are heterotrophy .

Fungi thallus have two phases:

- ❖ Somatic phase (vegetative phase): (unicellular , filamentous).
- ❖ Reproductive unites (gametes , spores , conidia).

Fungi Nutrition

The nutrition in fungi are **absorptive**, use Enzyme to break down a large Complex molecules in to small organic compounds , then absorbed it.

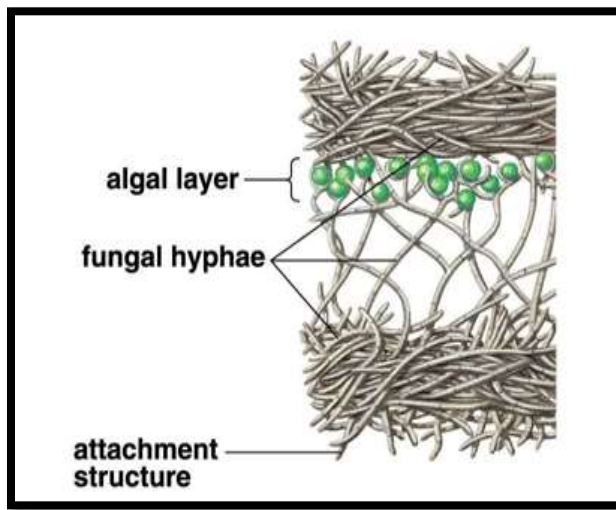
Type of fungi Nutrition

Nutrition in fungi divided into three divisions :

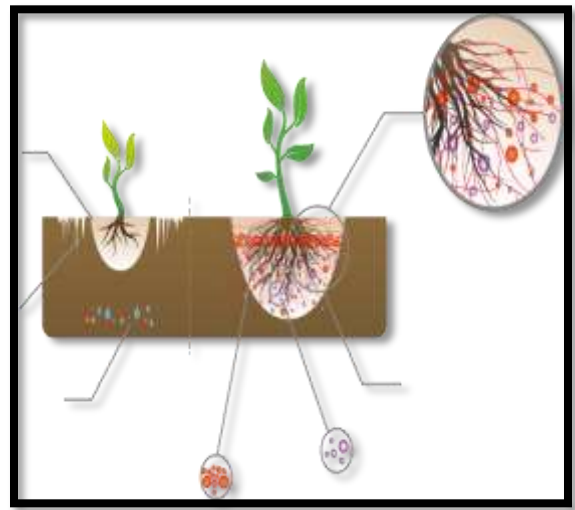
A-Saprophytism Nutrition: Living on the remains organisms (plants and animals) live on dead cells .

B-Parasitism Nutrition: Living on or inside Tissues of organisms causing diseases .

C-Symbiosis Nutrition: also called commensal , Fungus live beneficial relationship with another organism, such as : **Lichens:** benefit relationship between fungus and algae . **Mycorrhiza:** benefit relationship between fungus and plant root.



Lichens



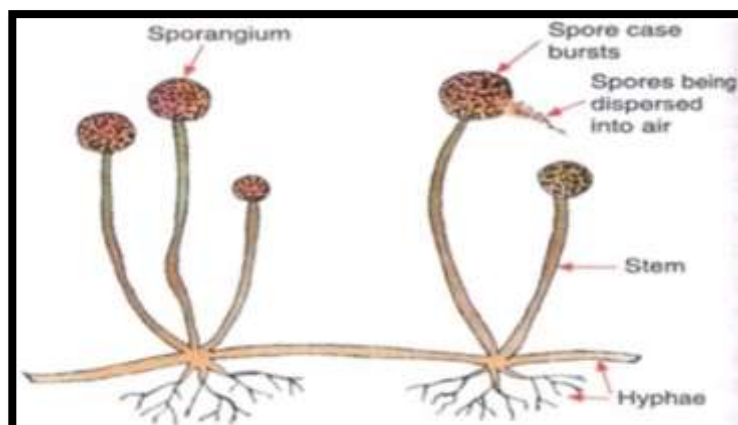
Mycorrhiza

Reproduction in Fungi

Types of Reproduction in fungi :

a-Asexual Reproduction(Anamorph), This reproduction is achieved in several ways :

- 1- Fragmentation forming Arthrospore .
- 2- Simple diffusion like yeast .
- 3- Budding forming Blastospores .
- 4- Forming Chlamydo spores .
- 5- Forming Spores .



Forming Spores .

b-Sexual Reproduction (Telemorph) : Must pass through three stages :

- 1- Plasmogamy (cell fusion) .**
- 2- Karyogamy (nuclear fusion) .**
- 3- Meiosis (reduction division) .**

Yeasts

Yeasts are eukaryotic, single-celled microorganisms classified as members of the fungus kingdom. and have many forms, from spherical to egg-shaped to filamentous. Most yeasts reproduce asexually by budding: a small bump protrudes from a parent cell, enlarges, matures, and detaches. A few yeasts reproduce by fission, the parent cell dividing into two equal cells. *Torula* is a genus of wild yeasts that are imperfect, never forming sexual spores.

Classification Yeasts

Domain	Eukaryota
kingdom	Fungi
phylum	Ascomycota
class	Saccharomycetes
order	Saccharomycetales
family	Saccharomycetaceae
genus	<i>Saccharomyces</i>

Penicillium

Penicillium is a genus of saprophytic (feeding on dead and decaying materials) fungi. They are commonly known as blue or green mould.

The thallus (mycelium) consists of highly branched networks of multinucleated, usually colourless hyphae, with each pair of cells separated by a septum. Conidiophores are at the end of each branch accompanied by green spherical constricted units called conidia. These propagules play a significant role in reproduction.

Classification *Penicillium*

Domain	Eukaryota
Kingdom	Fungi
Phylum	Ascomycota
Class	Eurotiomycetes
Order	Eurotiales
Family	Trichocomaceae
Genus	<i>Penicillium</i>

preparation of potato dextrose agar(PDA) medium

Suspend 39 g in 1 litre of distilled water. Bring to the boil to dissolve completely. Sterilize by autoclaving at 121°C for 15 minutes. In order to suppress bacterial growth, 1 ml of 10% sterile lactic acid can be added for dropping pH to 3.5. Mix well before pouring.