

## Lab-1-

### Classification of fungi :

**Classification :** is the systematic arrangement of organisms into groups based on specific standards .

#### Standard Endings :

Phylum .....mycota

Sub phylum ..... mycotina

Class ..... mycetes

Subclass ..... mycetidae

Order ..... ales

Family ..... aceae

#### The fungal characteristics that use in Classification :

- ❖ Cell wall
- ❖ The cell wall chemical component
- ❖ Somatic phase
- ❖ Reproduction
- ❖ Nutrition
- ❖ The structural that formed by fungi
- ❖ Fruiting bodies
- ❖ Spores

#### Fungal Webster , Weber and Hibbett Classification(2007):

##### 1- Kingdom : protozoa (protista)

Phylum : myxomycota

Phylum : plasmodiophoromycota

##### 2- Kingdom : Chromista (Stramenopila)

Phylum : Hyphochytriomycota

Phylum : Labrinthulomycota

Phylum : Oomycota

##### 3- Kingdom : Fungi

Phylum : Chytridiomycota

Phylum : Zygomycota  
Phylum : Ascomycota  
Phylum : Basidiomycota  
Phylum : Deutromycota

## **Kingdom : Fungi**

### **Phylum : Chytridiomycota**

#### **General characteristics :**

- ❖ Chytrids are the most primitive group of fungi and the only group that possess gametes with flagella.
- ❖ having zoospores (motile cells) with a single, posterior, whiplash structure (flagellum).
- ❖ Species are microscopic in size
- ❖ Most are found in freshwater or wet soils
- ❖ Most chytrids are unicellular; a few form multicellular organisms
- ❖ No septa between cells (coenocytic).
- ❖ Chytrids are important as degrader of cellulose, keratin.
- ❖ They reproduce both sexually and asexually
- ❖ Most are parasites of [algae](#) and animals or live on organic debris (as saprobes).
- ❖ Sometimes controlling algal blooms .
- ❖ A few species in the order Chytridiales cause [plant disease](#), and one species, [Batrachochytrium dendrobatidis](#), has been shown to cause disease in frogs and amphibians

#### **Habitat :**

Chytrids usually live in aquatic environments, although some species live on land. Some species thrive as parasites on plants, insects, or amphibians, while others are saprobes. Some chytrids cause diseases in many species of amphibians, resulting in species decline and extinction .

### **Class : Chytridiomycetes**

Order: Rhizophydiales

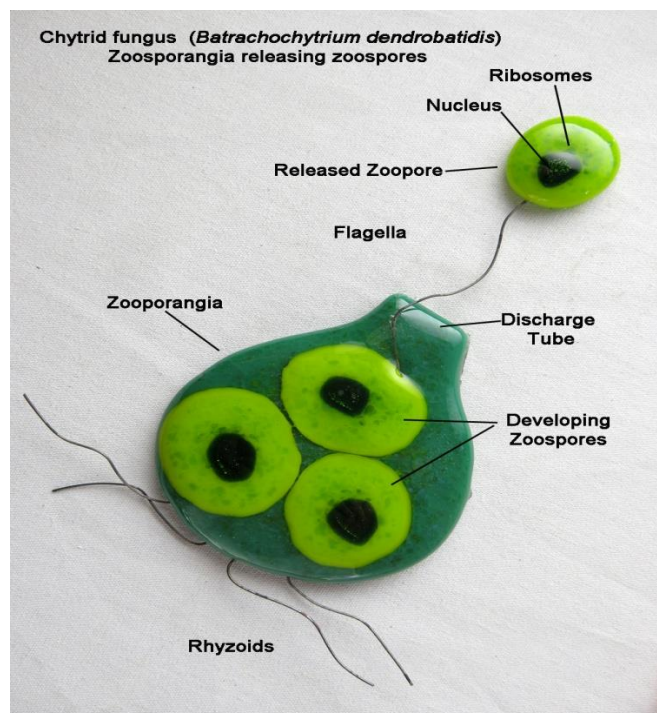
Ex: [Batrachochytrium dendrobatidis](#)

parasitic chytrid fungus that has been associated with population declines in endemic amphibian species in upland montane rain forests in Australia and Panama. It causes chytridiomycosis (fungal infection of the skin), or more specifically chytridiomycosis, in wild and captive amphibians. First described in 1998, the fungus is the only chytrid known to parasitise vertebrates. *B. dendrobatidis* can remain viable in the environment

(especially aquatic environments) for weeks on its own, and may persist in latent infections. Some amphibian species appear to have an innate capacity to withstand chytridiomycosis infection due to symbiosis with *Janthinobacterium lividum*.

*B. dendrobatidis* infects the **keratinized** skin of **amphibians**. The fungus in the epidermis has a **thallus** bearing a network of **rhizoids** and smooth-walled, roughly spherical, **sporangia**. Each sporangium produces a single tube to discharge spores.

**Zoospores** of *B. dendrobatidis*, which are typically 3-5  $\mu\text{m}$  in size, have an elongate-ovoidal body with a single, posterior **flagellum** (19-20  $\mu\text{m}$  long), and possess a core area of **ribosomes** often with membrane-bound spheres of ribosomes within the main ribosomal mass



*B. dendrobatidis* can grow within a wide temperature range (4-25 °C), with optimal temperatures being between 17-25 °C.