Kingdom: Fungi

Phylum1: Chytridiomycota

1- Zoosporic organisms with posterior whiplash flagellum,
2- Have chitin in the cell walls
3- **Forming coenocyte hypha**, may appear to isolate reproductive structures or to seal off damaged areas.
4- Chytrids are saprobic, and sometimes act as parasites.
5- Exhibit alternation of generations (sporothallus/sporophyte the asexual cycle (2n) and gametothallus/gametophyte the sexual cycle (1n)
6- Sexual reproduction through anisogamy, the fusion of two sexual gametes that differ in morphology (different size), and some members through heterogamy.
7- Forming asexual zoospores to colonize new substrates
8- Form rhizoid.

Order1: Chytridiales

Chytrids have **beneficial** roles in the soil for nutrient recycling and as parasites of organisms that attack plants, nematodes and oospores of downy mildews. On the other hand, they also have **harmful** roles as parasites of mycorrhizae, symbiotic fungi that help plants gain essential nutrients (figure 1).

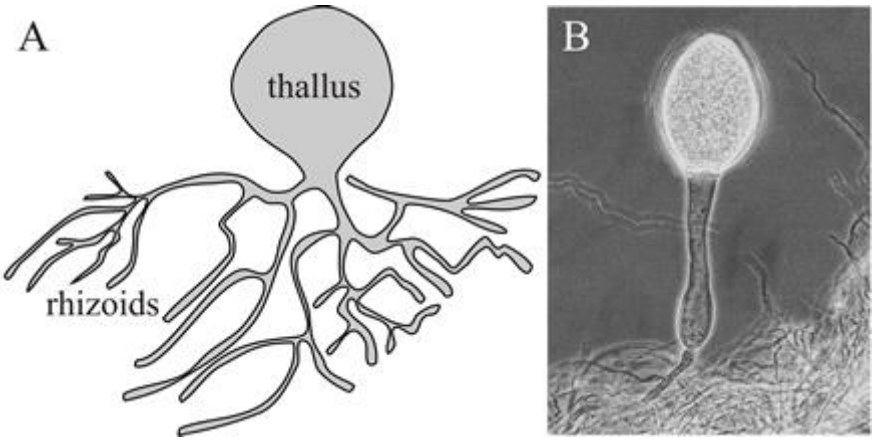

Figure (1) Chytrids with rhizoids

Family: Synchytriaceae

Genus: *Synchytrium decipiens* **(Slide available)**

Causes the **peanut wart** disease.

Order2: Blastocladiales

Family: Blastocladiaceae

Genus: *Allomyces sp.* **(Slide available on sporophyte)**

Experimental fungus. Its reproductive cycle includes both asexual and sexual phases. Produces diploid or haploid flagellated zoospores in a sporangium.

Sporophyte: The sporophyte generation is maintained asexually through the production of diploid zoospores (figure 4).

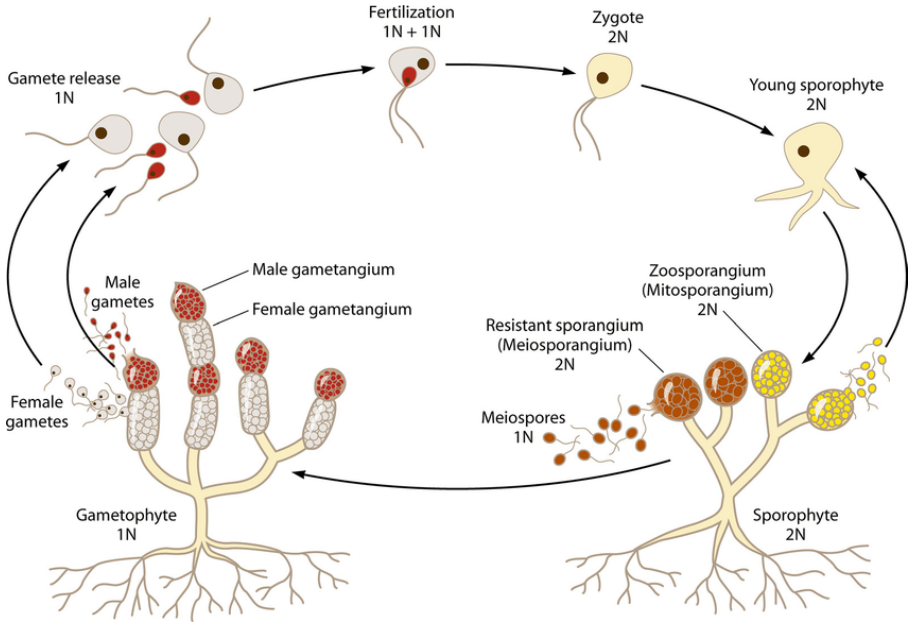

Figure (4) Reproduction in *Allomyces sp.*

Phylum2: Zygomycota (Conjugation fungi)

General characteristics:

1- Forming coenocyte hypha.

2- Sexual reproduction by spore with thick wall called **zygospore** find in zygosporangium after conjugation of gametes.
3- Asexual reproduction by non-motile sporangiospore inside sporangium or as conidia or chlamydospore.
4- Cell wall contains chitin and chitosan.
5- Not forming zoospore.

Class: Mucoromycetes

Order: Mucorales

Family: Mucoraceae

Genus: *Rhizopus stolonifera* (*Rhizopus nigricans*) (Slide available on zygotes)

Cause black bread mold disease. Having rhizoid and stolon; and the sporangiophore is not branched.