

Kingdom: Eumycota**Phylum : zygomycota (conjugation fungi)****General characteristics:**

- 1-Somatic phase consist of hypha as coenocyte, only in some species we can see septa in the end of reproductive part or old part of the 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 chlamyospore.
- 4-Not forming zoospore.
- 5-Cell wall contain chitin, chitosan.
- 6-Sporangium big size and in the end contain columella.

Species of this phylum wide spread in different environment we can isolate them from soil , animal waste and from infected insects and human .

This phylum called sugar fungi because it is lack to the enzyme that can analyses carbohydrate.

Pilobolus sp. Called shot gun fungi because it can shoot spores for long distance.

Some fungi belong to this phylum can live on insects and can trapped them so they called animals trapping mechanism as fungi belong to order Entomophthorales .and some of them called predators like *Zoopagles sp.*

Economics importance :

- 1-important in food industry like *Actinomucolegans, Mucor , Rhizopus*
- 2-use in biological control because it can parasite on other fungus as in *Harpellales*
- 3-fungi in this phylum can analyses organic materials in soil

4-commensal fungi in this phylum can be useful to the plant and increase the product .

Plant disease that causes by this phylum:

1-Rhizopus sp. Cause soft rot on fruit and vegetables

2-Mucor sp . Cause soft rot on fruit and vegetables.

3-Choanephora sp.Cause soft rot on cucurbtiace

4-Rhizopus sp and Mucor sp. Cause disease mucorosis to human and animals

Sub phylum 1:Mucoramycotina

General characteristics

1-have non motile spores (aplanospore)in their life cycle.

2-mycelium as coenocyte and Eucarpic.

3-Cell wall contain chitine.

4-Asexually reproduction by non-motile spores inside sporangium.

5-Sexual reproduction by conjugation of male and female gametes to form Zygosporangium.

6-Some of species saprophytic or facultative parasite and some of them obligate parasite.

Order Mucorales

Family :Mucoraceae

General characteristics of family:

1-This family have two important genus *Rhizopus* sp. and *Mucor* sp.

2-The different between the two genus is the presence of rhizoid and the place of conidiophore and if the conidiophore is simple or branched.

1-Genus:*Rhizopus sp.*

General characteristics:

- 1-Having rhizoid and stolon and the conidiophore is not branched.
- 2-The conidiophore appear from the same place of the rhizoid
- 3-inter in some steps of produce cortizone , lactic acid and fumaric acid.
- 4-important species:

1-*Rhizopus nigricans* cause soft rot on vegetables and fruit.

2-*Rhizopus stolonifer* cause Bread mould disease .

2-Genus:*Mucor sp.*

General characteristics:

- 1-No rhizoid , no stolon in the mycelium.
- 2-The conidiophore appear direct from the mycelium.
- 3-branched conidiophore and each branch carry single sporangium.