Order : Saprolegniales

1- *Saprolegniales* has nearly 15 genera known as water molds (Oomycota) causing destructive endemics in aquatic animals. *Achlya*, *Aphanomyces*, and *Saprolegnia* are the most dangerous threats to fishes and crabs across the world.
2- Numerous species of Saprolegniales infecting fish, fish eggs, amphibians and crustaceans
3- Play an important ecological role in decomposition and recycling of materials in the aquatic ecosystem
4- The major cell wall components in *Saprolegniales* are cellulose, and glucans, but some species also produce small amounts of chitin

Family : Saprolegniaceae

which is the most important family of the order Saprolegniales, contains 19 genera and about 150 species.

❖ ***Saprolegnia sp. :***

- Saprolegnia is have a wide range of temperature, 3–33 °C but is more prevalent in lower temperatures. While it is found most frequently in freshwater
- Saprolegnia filaments (hyphae) are long with rounded ends, containing the zoospores
- It most frequently targets fish Through necrosis of the skin .
- spread across the surface of its host as a cotton-like film
- saprolegniasis is a disease of the epidermis of fish .
- Spores commonly enter the fish body via damaged gills.
- *Saprolegnia* sp. species can also infect fish eggs .
- A Saprolegnia infection is usually fatal
- sexual reproduction begins with the production of male and female gametangium, antheridia and oogonium respectively. These unite and fuse together via fertilization tubes. produced an oospore.
- asexual reproduction is by means of zoospores produced in a zoosporangium, which develops at the end of non-septate cells.

Figure (1) fish Saprolegnia

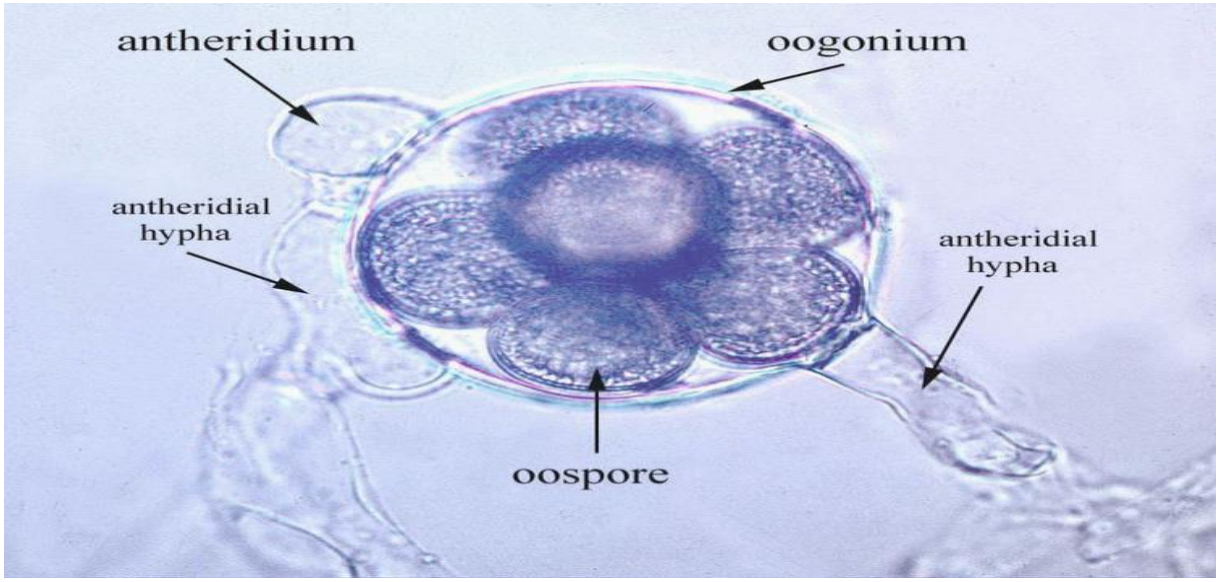

Figure (2) sexual reproduction and produced oospore

❖ ***Achlya sp.***

- Achlya is one of the most virulent genera in comparison with Saprolegnia in freshwater fishes and it causes severe damages in aquaculture.
- In the infected fish, the disease appears as cotton wool-like lesions causing the skin destruction.
- In members of this genus, primary aplanospores are discharged from sporangium, and before swimming away, stay near the exit of the sporangium until a ball of spores is formed
- Molecular phylogenetic studies have shown that *Achlya* sp. is polyphyletic .
- a group of Achlya species with subcentric oospores approximately 80 species have been accepted in the genus *Achlya*
- About 20 species of *Achlya* have previously been reported to infect live fishes
- previously been found to cause seedling rot on rice.
- Importantly, some species of *Achlya* have received great interest as steroid producers.

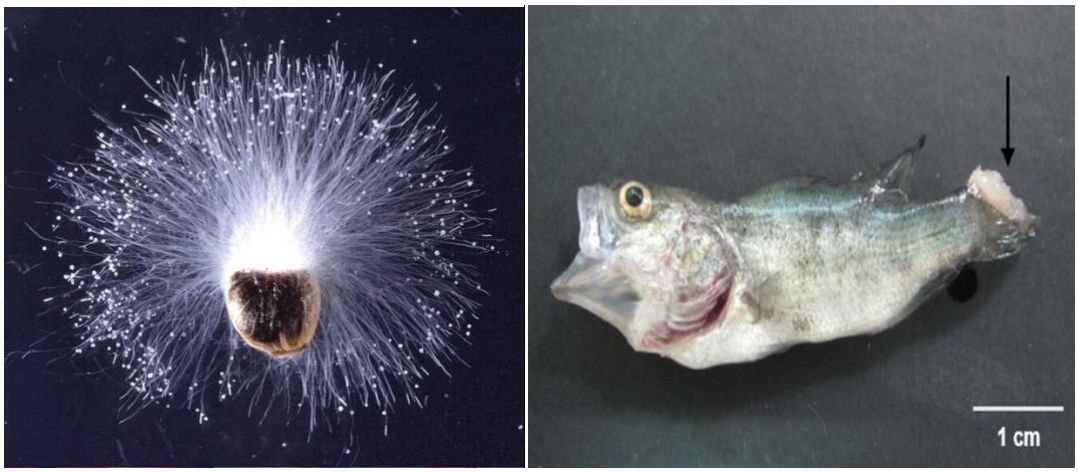

Figure (3) *Achlya* sp. in fish