

## Fungus disease in fish, diagnosis and treatment

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Fungal infections (fungal infections are called mycoses) are among the most common diseases seen in temperate fish. Because fungal spores are found in all fish ponds and create problems in stressed fish. Poor water quality can also lead to an increase in fungal infections in an otherwise healthy fish population. Most fungal infections only attack the external tissues and only few fungal infections that will infect the internal organs of fish.

Possibility of fungal infections:

1. Poor quality of water.
2. Poor hygiene.
3. Fish that are injured have other diseases.
4. Dead fish/large amounts of decomposing organic material in the pond.

1. Cotton wool fungus (*Saprolegniasis*): The most common presentation of water mold infection as relatively superficial, cotton like growth on the skin or gills. Such lesions usually begin as small, focal infections that can rapidly spread over the surface of the body. New lesions are white and over time will become red, brown, or green.

George, *et al.* (1998) reported that typical saprolegniosis lesions grow surface of the skin, they usually do not penetrate deeply into muscle. The area of skin and gill damage determines the severity of the disease. *Saprolegniasis* is mainly a secondary infection seen after damage to the fish integument. Water pollution and overcrowding like other predisposing factors were also include. *Saprolegnia* can act as a primary pathogen infecting fish that have not shown signs of previous damage. This disease attacks are temperature-dependant (temperature ranging from 32° to 95°F but seem to prefer 59° to 86°F) usually occurring at low temperatures.

Symptoms:

1. Fish fungus appears as gray or white patches on the skin/gills.
2. They may become brown/green (later stage) as they trap sediment.

3. *Saprolegnia* normally establishes as small, focal infections that then spread rapidly over the body or gills.

Treatment:

Fish are removed from the water they appear to have a "slimy" matted mass growing out of the skin and scales.

Use the 100mg/ litter strong malachite green solution to clean the lesion and apply a waterproof cream.

2. *Ichthyosporidium*: Gustafson and Rucker (1956) reported that *Ichthyosporidium* is a fungus, but it manifests itself internally. It primarily attacks the kidneys and liver, but it spreads everywhere else.

Symptoms: The fish may become sluggish, lose balance and eventually show external cysts or sores.

Treatment: 1% Phenoxethol solution added to food or Chloromycetin added to the food has also been effective.

3. *Exophiala* sp.: *Exophiala salmonis* and *E. psychrophila*; these fungal organisms have hyphae that are septated, irregular in width and branched (Robert, 1989). Both fungal diseases infected the many species of fish.

Symptoms:

1. Fish become darker and lethargic, with erratic and abnormal swimming behavior.
2. Round yellow to white granulomas are present in visceral organs like liver, kidney and spleen with prominent enlargement of the posterior kidney.

References

1. George E. Howe; Jeff J. Rach and Jeff J. Olson (1998): *Journal of Aquatic Animal Health* .10:62-68.
2. Gustafson, P.V., and R.R. Rucker. (1956). *Studies on an Ichthyosporidium infection in fish: transmission and host specificity*. U.S. Dept. Interior, Fish and Wildlife Service, Special Scientific Report series No. 166, 8 pp.
3. Robert, R. J. (1989). *Fish pathology*. Bailliere Tindall, London, 2nd edition.