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Saprolegniasis

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Oreochromis niloticus (the Nile Tilapia) with 'cottony lesions' Saprolegniasis

SAPROLEGNIASIS IN FISH

What is Saprolegniasis?

Saprolegniasis is a fungal disease of fish and fish eggs. It is caused by spores of *Saprolegnia* species which is in the group of "water moulds." These moulds (fungi) are common in fresh or slightly salty water (brackish water). Fungal spores are found in all fish ponds and create problems in stressed fish. The fungus attacks open wounds on fish and spreads to healthy tissue. Poor water quality including presence of dead eggs are often associated with this disease. Saprolegnia is sometimes called 'cotton wool' disease.

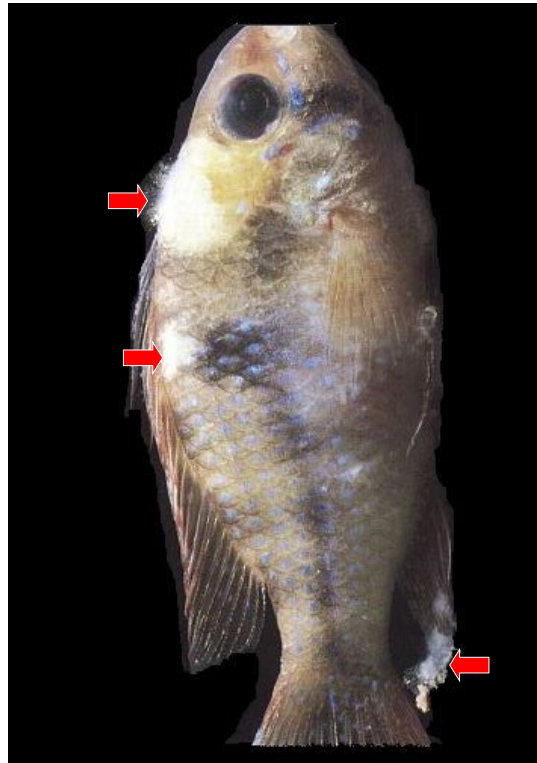
What causes Saprolegniasis?

Saprolegnia has been observed to thrive in environments with the following risk factors:

- ◆ **Poor water quality.**
- ◆ **Low temperatures** (at or below 20°C), hence high mortalities in winter
- ◆ Presence of **chemical irritants** (e.g.:disinfectants, soaps, or detergents) in the water. Chemicals remove protective mucous layer on fish's skin leaving it vulnerable to infection by *Saprolegnia*.
- ◆ **Overcrowding** (which leads to risk of skin damage).
- ◆ **Malnutrition.**

Symptoms of Saprolegniasis

- ◆ *Saprolegnia* appears as tufts of **cotton-like material** colored white, grey or brown on the skin, fins, gills, or eyes of fish — or on fish eggs.
- ◆ **Respiratory distress** may be evident if the gills are affected and death can follow rapidly.
- ◆ With progression of infection fish usually become lethargic (**weak**) and **less responsive to external stimuli**. Fish in such a condition are usually targeted by predators.
- ◆ Under a microscope, *Saprolegnia* appears like branching trees called **hyphae**.
- ◆ **Protozoan parasites** are frequently found on gills of fish suffering from winter Saprolegniasis.



A fish showing typical cotton-wool like tufts of *Saprolegnia* fungi

Treatment

Bath treatment with **Sodium hydroxide** at 10-25g/ liter (10-20min); **Potassium permanganate** at 1g/100liters (30-90min); or **Copper sulphate** at 5-10g/per100liters (10-30min).

Other common treatments recommended include formalin and povidone iodine solutions.

Over treatment can further damage fish tissue, resulting in recurring infections.

Disease Management, Prevention and Control

Saprolegniasis is best prevented by good management practices such as:

- ◆ Good water quality and circulation
- ◆ Avoidance of overcrowding to minimize injury especially during spawning (correct stocking densities)
- ◆ Good nutrition
- ◆ Treating ponds with quick lime or soda ash after destocking is of paramount importance.

Once *Saprolegnia* is identified in an aquatic system, sanitation should be evaluated and corrected. Environmental management and reduction of stressors is essential for satisfactory resolution of *Saprolegniasis* given that *Saprolegnia* is usually a secondary pathogen. As water temperatures rise, cases of *Saprolegniasis* tend to decline.



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