

Epizootic ulcerative syndrome (EUS)



BY

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INTRODUCTION

Epizootic Ulcerative Syndrome, popularly known as EUS, has caused severe damage to India's aquaculture and also known as **mycotic granulomatosis** (MG) or **red spot disease** (RSD), is a disease caused by the water mould *Aphanomyces invadans*. It infects many freshwater and brackish fish species in the Asia-Pacific region and Australia. It appeared for the first time in India in 1988 and has covered almost the entire length and breadth of the country and the disease has been reported from some states.

One common feature of the disease is that it initially affects the bottom-dwelling species like murrels, followed by catfishes and weed fishes. Subsequently, the Indian major carps also get affected. Unlike other diseases, this syndrome has been disturbingly found to affect a variety of fish species, both wild and culturable, resulting in large scale mortalities.

The most severely affected ones are *Channa sp.*, *Puntius sp.*, *Clarias batrachus*, *Heteropneustes fossilis* and *Mastacembelus sp.*, Other species which are affected are *Glossogobius sp.*, *Trichogaster sp.*, *Gadusia sp.*, *Amphipnous cuchia*, *Wallago attu*, *Anabas testudineus*, *Salmostoma bacaila*, etc.

Among the major carps, it has been recorded in Catla, Mrigal, Rohu and Kalbasu. Common carp, Grass carp and Silver carp are also affected. Fishes of all sizes are affected. However, the incidence of infection is more in the younger ones. Clinical signs and gross pathology in the affected fishes are similar in almost all the species with moderate to severe ulcerative skin lesions. The lesions start as small grain to pea-sized haemorrhagic spots over the body which ultimately turn into big ulcers of the size of a coin, with grayish, slimy central necrotic area surrounded by a zone of hyperemia. The disease affects the fish to such an extent that they start rotating while still alive, and eventually die. Affected fishes with mild lesion may not show any clinical sign, whereas those with marked ulcerative lesions exhibit distinct abnormal swimming behaviour with frequent surfacing. In severe cases, haemorrhages have been noticed over the surface of the liver and kidney.

Clinical symptoms can be categorized in three stages:-

- ❑ Initial stage characterized by localized haemorrhages on scale pockets
- ❑ Advanced stage showing sloughing off of scales with degeneration of epidermal **tissue and the ulceration, and**
- ❑ Final stage characterized by deep and large ulcers on various parts of the body.
- ❑ Many antibiotics, sulphonamides, herbal **preparations and chemicals have been advocated as preventive and curative measures.** Yet, lime is the most accepted therapeutic agent.
- ❑ The chemical mixture has **been named Cifax is used for treatment** of EUS. The yellowish brown liquid is advised to be diluted in a sufficient quantity of water before being sprayed over the water body evenly for a thorough mixing. **Appreciable changes are noticed in the affected fish within 3-4 days and marked** improvement of the ulcerative condition is noticed within 7 days.

Thanks