

Environmental Fish Diseases, Diagnosis and Management

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Abstract

Environmental diseases in aquaculture play a crucial role in the industry, so that it is imperative to acquaint different aspects of environmental factors. Acquiring the knowledge (i.e. what are these factors, how we can evaluate and measure it in the field, how we can manage these factors and overcome its sequelae) will enhance and maximize the net profit of the fish crop.

The main outlines of this course are introducing major environmental diseases in fish and shrimp farms, diagnosis and management of these diseases. Moreover, emphasis on the use of different species of fishes as indicators for pollutants will be addressed. Another important recent notion is to use transgenic zebra fish as an indicator for water pollution. Engineered fish expressed fluorescent proteins under the control of different inducible gene promoters. Stress responsive promoters were used to detect environmental heavy metals/toxins. Also, zebra fish embryo was used to assess water quality in lakes as biomarker for stress protein response and toxicity. Cytochrome P450 1A (CYP1A) as a potential biomarker for water pollutants has received attention recently in fish. Certain environmental contaminants such as Dioxin, PCBs could induce the transcription of CYP1A genes.

These objectives will be achieved via lecturer using power point. This course is intended for students with a biology background and/or those are preparing for their M.S. degree.

Course objectives

- To understand the major water quality parameters, where fishes and shrimp lives.
- To emphasize on major environmental diseases in aquaculture.
- To acquire different methods of diagnosis of these diseases.
- To manage these diseases in the ponds, aquaria, and tanks

Course level

Intermediate