

FISH DISEASE AND THEIR REMEDIAL MEASURES

Introduction:

Fish diseases, in various forms have been tormenting the aquaculturists ever since man learned the art of fish husbandry. The stability of a fish population in particular habit is very often disrupted by various factors viz., disease, habitat destruction, depletion of resources or other application of environmental stressors. Fish is in a State of equilibrium with the environment and a change in the environment parameters beyond the tolerance limit disturbs the equilibrium resulting in stress response in fish and making it valuable to fish disease.

It should be understood that fish suffer from many diseases, of which from causative point of view they are classified as follows:-

- (a) **Non- parasitic infection by environmental stresses e.g.gas disease.**
- (b) **Parasitic infection by Fungi, bacteria, protozoa, worms and crustacean.**

Common fish diseases, their symptoms and control/ remedial measures:

Specific fish Disease	Symptoms	Control /remedial measures
<u>Non – parasitic infection</u>		
Environmental diseases		
Gas disease (air embolism)		
Depletion of oxygen	Mouth remains open, small bubbles beneath the skin, Gills look pale.	Aeration of water areas, growth of water hyacinth..
Growth of algae	Pond water turns green, fishes gape for like respiration.	Sprinkling of raw cow dung, growth of water hyacinth.
Increase of hydrogen sulphide	Pond bottom / muck smells like rotten eggs resulted in choking respiratory.	Raking of pond bottom and change of water.
Excess of CO ₂ or high P ^h of water	Excessive secretion of mucus by gills and body surface.	Aeration of pond/ water areas.
Parasitic infection		
Fungal disease		
	Infects fry, fingerlings & adults becomes weak and lethargic, ulceration of skin, blindness, tufts of minute white hair-like outgrowth in affected parts.	<ul style="list-style-type: none"> - Dip treatment in 3% common salt for 5- 10 mins. - 1:2000 parts of copper sulphate (CuSO₄) for 5- 10 mins. - 1:1000 parts of Potassium permanganate (KMno₄) for 5-10 mins until fish shows distress.
Gill rot	Gill becomes greyish- white may finally drop off occurs during hottest time of the year.	<ul style="list-style-type: none"> - Apply about 100 kgs/ ha quick lime in the pond - 3-5% common salt bath for 5 mins. - 5: 1000 parts KMno, bath for 5-10mins. - 8-12kgs/haCuSO₄ applied in pond.

<p>Bacterial disease</p> <p>Fin and tail rot</p>	<p>White line appears in margin of fin and spreads to all parts of the body.</p>	<ul style="list-style-type: none"> - 1,2000 parts of CuSO₄ for 1-2 mins - Painting/intense application the affected part by CuSO₄ also helps.
<p>Ulcer</p> <p>Dropsy</p>	<p>Sores and ulcers appear in the body. Increases in size, gradually expose the muscles.</p> <p>Accumulation of fluid inside the body cavity, scales protrudes</p>	<ul style="list-style-type: none"> - Badly infected fish be destroyed - 1:1000 parts of KMnO₄ applied in pond. - 1:2000 parts CuSO₄ dip treatment for 1min for 3-4 days - 1:1000 parts KMnO₄ disinfect the pond - 5:1000 KMnO₄ dip treatment for 3 mins - 60 mg Chloromycetin in 4.5 ltr water bath the infected fish.
<p>Eye disease</p> <p>Protozoan diseases</p> <p>Trichodiniasis</p> <p>White gill spot disease</p> <p>Whit scale spot disease</p>	<p>Infects eye, optic nerves, brain of fish mostly Catla.</p> <p>Eye becomes opaque eyeball bursts.</p> <p>Pale colour of gills with a coating of cram layer of mucus.</p> <p>Gills covered with white spots like pox.</p> <p>Scales covered with white spots, falling of scales, perforation of scales.</p>	<ul style="list-style-type: none"> - Initial stage Chloromycetin 8- 10 mg/ltr bath for 1 hour for 2- 3 days - Disinfect pond by 1:1000 parts KMnO₄ - Terramycin 100 mg / kg feed applied during 3 days. - 3-5% common salt bath hourly for 1 week. - 1:5000 parts formalin treatment in pond/ dip hourly for 7-10 days. - 3-5% common salt bath for 5-10 mins. - Decreasing density of fish from affected pond . - 3-5% common salt solution bath for 5-10 mins. - Decreasing density of fishes in pond.

<p>Helminth (worm disease)</p> <p>Dactylogyrosis</p> <p>Gyrodactylosis</p> <p>Black spot disease</p> <p>Ligulosis (tapeworms)</p>	<p>Excessive secretion of mucus in gills.</p> <p>Mucus on caudal peduncle, infects skin and gills, dropping of scales.</p> <p>Black oval shaped patches and nodules on body.</p> <p>Abdomen enlarges abnormally and body becomes dark.</p>	<ul style="list-style-type: none"> - 3-5% common salt bath for 5-10 min. - 1:2000 part Acetic acid bath for 5 mins. - 1:5000 parts fprmalin bath for 5- 10 mins. - Dip in 1.1 lakh parts of Picric acid for 1 hour. - Removal of moluscan population from water areas. - Removal of birds from around affected areas.
<p>Crustacean disease</p> <p>Lemaeosis</p> <p>Ergasilosis</p> <p>Argulosis</p>	<p>By anchor worms, buried deep in host tissue, rubbing against pond dykes or even bottom, becomes lethargic.</p> <p>Irritation in gills and fins.</p> <p>Parasites visible on gills and body surface.</p>	<ul style="list-style-type: none"> - Gammaxene @ 1 ppm application in the pond. - 5% common salt bath to the affected fishes. - Removal of eggs of Argulas by hanging corrugated sheets in water and removing them and drying after a week to kill eggs.