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:

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<tr>
<th>Specific fish Disease</th>
<th>Symptoms</th>
<th>Control /remedial measures</th>
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<tr>
<td>Non – parasitic infection</td>
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<td>Environmental diseases</td>
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<td>Gas disease (air embolism)</td>
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<td>Depletion of oxygen</td>
<td>Mouth remains open, small bubbles beneath the skin, Gills look pale.</td>
<td>Aeration of water areas, growth of water hyacinth.</td>
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<td>Growth of algae</td>
<td>Pond water turns green, fishes gape for like respiration.</td>
<td>Sprinkling of raw cow dung, growth of water hyacinth.</td>
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<td>Increase of hydrogen sulphide</td>
<td>Pond bottom / muck smells like rotten eggs resulted in chocking respiratory.</td>
<td>Raking of pond bottom and change of water.</td>
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<td>Excess of CO₂ or high pH of water</td>
<td>Excessive secretion of mucus by gills and body surface.</td>
<td>Aeration of pond/ water areas.</td>
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<tr>
<td>Parasitic infection</td>
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<tr>
<td>Fungal disease</td>
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| Gill rot                               | Gill becomes greyish- white may finally drop off occurs during hottest time of the year. | - 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.  
- Apply about 100 kgs/ ha quick lime in the pond  
- 3-5% common salt bath for 5 mins.  
- 5: 1000 parts KMnO₄, bath for 5-10mins.  
- 8-12kgs/haCuSO₄ applied in pond. |
|                                      |                                                                          |                                                                 |

| Bacterial disease          | Fin and tail rot | White line appears in margin of fin and spreads to all parts of the body. | - 1,2000 parts of CuSO₄ for 1-2 mins  
- Painting/intense application the affected part by CuSO₄ also helps. |
|---------------------------|------------------|----------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Ulcer                     | Sores and ulcers appear in the body. Increases in size, gradually expose the muscles. | - 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. |
| Dropsy                    | Accumulation of fluid inside the body cavity, scales protrudes | - 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. |
| Eye disease               | Infects eye, optic nerves, brain of fish mostly Catla. | - 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. |
| Protozoan diseases        | Trichodiniiasis  | Eye becomes opaque eyeball bursts.  
Pale colour of gills with a coating of cram layer of mucus. | - 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. |
| White gill spot disease   | Gills covered with white spots like pox. | - 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. |
| Whit scale spot disease   | Scales covered with white spots, falling of scales, perforation of scales. | - 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. |
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<th>Disease Type</th>
<th>Description</th>
<th>Treatment Options</th>
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<tr>
<td><strong>Helminth (worm disease)</strong></td>
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<td>Dactylogyrosis</td>
<td>Excessive secretion of mucus in gills.</td>
<td>- 3-5% common salt bath for 5-10 min.</td>
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<td>Gyrodactylosis</td>
<td>Mucus on caudal peduncle, infects skin and gills, dropping of scales.</td>
<td>- 1:2000 part Acetic acid bath for 5 mins.</td>
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<td>Black spot disease</td>
<td>Black oval shaped patches and nodules on body.</td>
<td>- 1:5000 parts formalin bath for 5-10 mins.</td>
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<td>Ligulosis (tapeworms)</td>
<td>Abdomen enlarges abnormally and body becomes dark.</td>
<td>- Dip in 1.1 lakh parts Picric acid for 1 hour.</td>
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<td><strong>Crustacean disease</strong></td>
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<td>Lemaeosis</td>
<td>By anchor worms, buried deep in host tissue, rubbing against pond dykes or even bottom, becomes lethargic.</td>
<td>- Gammaxene @ 1 ppm application in the pond.</td>
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<td>Ergasilosis</td>
<td>Irritation in gills and fins.</td>
<td>- 5% common salt bath to the affected fishes.</td>
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<td>Argulosis</td>
<td>Parasites visible on gills and body surface.</td>
<td>- Removal of eggs of Argulas by hanging corrugated sheets in water and removing them and drying after a week to kill eggs.</td>
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