

## **DISEASES OF FISH AND THEIR CONTROL / PREDATORS**

The tremendous growth in fish farming activity in Punjab has highlighted various issues of fish husbandry including fish diseases and their control. The problems of fish diseases are related to stocking density, level of aquaculture technology applied and inputs going into the fish ponds.

In fish farms the fishes are densely stocked and thus are more susceptible to different diseases. Uncontrolled and unregulated transport of fish and poor farm management is also considered as cause of spread of disease. Disease causes mortality, poor growth, loss of fecundity and minimize production.

All culturable fish species, *Labeo rohita*, *Cirrhinus mrigala*, *Catla catla*, *Hypophthalmichthys molitrix* and *Ctenopharyngodon idella* are affected by bacterial, fungal and parasitic diseases and infections. Moreover, poor water quality in fish ponds also put fish under stress which can lead to fish mortality.

In ponds fishes are also under stress of predation by some predators at the early age.

Some commonly occurring fish diseases, predators and their control is given as under:-

- **Abdominal Dropsy**

This is the most common and important bacterial disease of cultured carps. Bacteria infect fish through water, physical contact and contaminated feed. The diseased fish has sunken eyes, contains watery fluid mixed with blood in abdominal cavity and belly becomes swollen. This disease is treated with the use of antibiotic i.e. oxytetracycline or terramycine in feed for 5- 10 days @ 60 mg/kg fish weight.

- **Fin Rot**

This is also a bacterial disease of cultured carps. The edges of fins of diseased fish become darker in colour and split up. The caudal fin become reddish and is eventually eroded. This disease is also treatable with antibiotic chloromycetin bath @ 60 mg/l for 5 minutes for six days and copper sulphate bath @ 50 mg/l for 1 minute.

- **Lernaesis**

This is an ectoparasitic infection in fish. The parasite *Lernaea* sp. penetrate into the skin of fish and cause wounds, which lead to secondary infection. Infected fish become weak and their scales fall down. This parasite infects all parts of the body of the fish. Lernaesis is treated with chemicals such as dipterex @ 0.2 – 0.5 mg/litre in pond and thunder @ 0.25 ppm in pond.

- **Saprolegniasis**

This is a fungal infection commonly found in our fishes. The spores of fungus saprolegnia invade wounded fish. The fungal hyphae penetrate into fish musculature and damage fish flesh. At the point of attachment fungus appear as cotton wool. Saprolegniasis can be treated by giving Malachite green bath to infected fish @ 1 mg/litre solution for 1 hour.

- **Anoxia**

Depletion of oxygen in fish pond is called anoxia. This condition may be due to rise in water temperature in pond, over-stocking of fish seed and other biological factors. In anoxia condition, fish comes on the surface of water, stops feeding and shows restlessness. The Anoxia condition in pond can be improved by addition of fresh water and agitating pond water.

- **Fish Predators**

In fish farms there are some predators which prey on fish from fry to adult stage. These predators include water insects, amphibians, reptiles, birds, carnivorous fish and even mammals.

Harmful insects include, water beetle, water bugs, water scorpion etc. These attack fish eggs and fry. These insects can be controlled by improvement in nursery ponds management.

Frogs and toads also prey on fish fry and fish. The best way to control them is by destroying the breeding grounds of these amphibians.

Tortoises and snakes also eat fish. These can be controlled by netting them out of pond and destroying them.

Aquatic birds like king fisher, fishing eagle, heron and others prey on small and big fish. These birds can be controlled by shooting and keeping away.

The presence of carnivorous fish in pond also affects fish production and growth. These fish prey on farmed fish. Carnivorous fish include *Mystus sp.*, *Wallago sp.* *Channa sp.* etc. These fish may enter the farm through canal water or by stocking unidentified fish seed from natural waters. These unwanted fish can be eradicated by use of rotenone and even installing fine screens at water inlet.

Water rats and otter eat small fish, eggs, fry and even big fish. These animals also destroy fish feed. These predators can be controlled by fixing fences around the ponds and catching them in traps.