

A Commentary on Fish Bacterial and Viral Diseases

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DESCRIPTION

Like other animals, fishes can be subject to many diseases particularly when farming is intensive. Bad quality of water can cause more or less serious diseases. When the water is polluted, the death of all sizes of fishes is rapid. Large scale mortality is seen in the fish population due to parasitic infections. Health of the fishes depends a good deal on the sanitary conditions prevalent in the water body concerned. Normally, fish diseases cannot be transmitted to man with the exception of a few parasitic tape worms (e.g. *Diphyllobothrium*). Disinfection of water bodies with benzalkonium chloride, quicklime or Cyanamide, Potassium permanganate and a bath in common salt solution are some of the means for controlling the spread of fish diseases in general. In addition to various piscine pathogenic microorganisms, viruses are the principal agents of fish diseases. The diseases of fishes may be classified as follows:

1. Bacterial diseases.
2. Viral diseases.
3. Fungal diseases.
4. Diseases caused by Protozoans.
5. Diseases caused by worms.
6. Diseases caused by crustaceans.
7. Environmental diseases.
8. Nutritional diseases.

Now they are being described in detail along with their preventive and curative measures.

Bacterial diseases

Abdominal dropsy: The most feared disease of carp is the infectious abdominal dropsy. The bacterium known as *Aeromonas (Pseudomonas) punctata* is the primary cause of this disease. During the spring season, the belly of the fish swells by the accumulation of yellow or pink colored liquid in the body cavity. This is the intestinal infection; however, liver and kidney are also affected. The ulcerative form is recognized by profuse

ulceration of skin evident by the presence of bloody areas on the body and the muscle is seriously affected. When the fishes are infected they feel pain and unrest which is evident by their frequent jumping. In some cases fins may be partially destroyed. It has been suggested that viruses are also responsible for causing this disease. Control measure: Dead fishes should be immediately removed. Dropsy resistant carps should be selected for culture. When the carps are stocked and there is possibility of infection, antibiotics should be mixed with artificial food or they should be injected in a bath. Chloramphenicol is effective against *Aeromonas punctata*. Oxytetracycline and Streptomycin are also very much effective. For injection purpose 1 to 1.5 mg of chloramphenicol has been advised for a fish of 100 g body weight. For mixing the antibiotics with food, a fish with 100 g body weight should be provided 1 mg of it per day. Some workers have also advised to dip the fish in copper sulphate solution (1:2000) and KMno₄ solution (5 ppm) for two minutes.

Furunculosis of salmonids: It is a bacterial disease caused by *Aeromonas salmonicida*. Salmon and trout are very easily attacked. About 2 year Salmonids are rapidly killed. This bacterial infection is transmitted through the digestive tract and the skin. The bacteria breed in the liver, spleen, kidneys and the blood. *Aeromonas salmonicida* is a rod-shaped bacterium 2-3 µm in length. Under the skin bloody boils of different sizes can be easily traced. The centre of infection is present along the muscular fibres. Inflammation of the intestines, spotted liver, haemorrhages at the bases of the fins, in the gill covers and in the muscles is also important signs of this disease. Mass mortality has been reported in trout.

Viral disease

Viral haemorrhagic septicaemia (VHS) of trout: It is the most important example of viral infection discovered for the first time by Schaperclaus and later on confirmed by Zwillenberg. This virus has RNA genome and measures 50 nm in diameter. This disease becomes suddenly chronic causing very high mortality rate. The growth rate of the fish decreases earlier. The metabolic changes can be easily marked. The kidneys and liver are the most affected organs. This disease has been reported in all age groups of fishes. Haemorrhages in some muscles and perivisceral tissue,

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bleeding in air bladder, liver discolouration, kidney swelling, bleeding in gills and fins, etc. are the important symptoms. Fishes show abnormal movement and position in water. Swollen eyes (exophthalmos), general anaemic condition, reduced hemoglobin percentage, protruded anus, muscular oedema, swollen belly, haemorrhages in the air-bladder and in the

muscles, presence of neutral or alkaline liquid in the stomach, red intestine, decaying and disintegrating liver, posteriorly swollen kidneys sores on the skin, pale gills etc. are some of the important signs of the disease. In addition to freshwater fish viruses, there are also marine viruses such as lymphocytosis virus (WV).