

Fish and Shellfish Diseases in Culture Systems

XI. FURUNCULOSIS

In the previous papers in the present series, different aspects about the infection, infected animals and disease diagnosis have been discussed. This and future communications would be highlighting the significant finfish and shellfish diseases that are encountered in India.

1. INTRODUCTION

Furunculosis is an important systemic bacterial disease found among finfishes both in culture systems and in the wild. This disease was originally described by Emmerich and Weibel in 1894 isolating the causative bacterium from hatchery trout from Germany. The name furunculosis originated from the very appearance of furuncles (boils) or ulcer on the body of the host. It is a serious disease affecting all the age groups and often results in mass mortality.

In India, this disease has been recorded in *Mugil cunnesius* (Almeida 1962); *Barbus pentazona*, *Cichlasoma meeki* and *Xiphophorus maculatus* (Pillai, 1978).

2. DIAGNOSTIC SIGNS

Boils and/or ulcers may be present (Fig. 1), skin lesion tinged with blood having or not having pus, anorexia, pale gills with or without lesion, sluggish movements, fraying of the fins, inflamed intestine, myocardial necrosis liquefaction of the kidney, spleen and petechial hemorrhage of the liver may occur.

On microscopical examination of the ulcerated part of the infected fish, loss of epidermis and dermal inflammation may be noticed. Secondary fungal attack may also take place.

C. Thankappan Pillai

Central Marine Fisheries Research Institute

Haematologically, the erythrocyte sedimentation rate (ESR) is increased.

Here, it may be noted that all the signs of the disease may not manifest themselves at the same time.

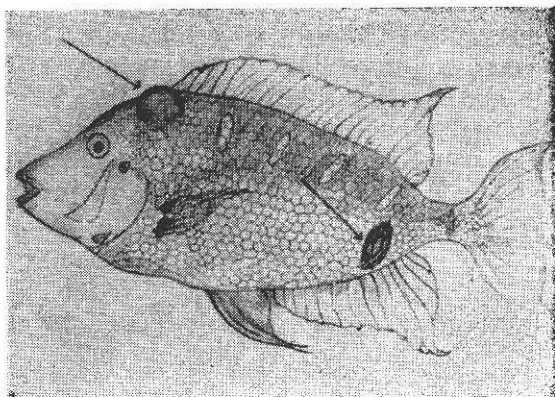


Fig. 1. *Cichlasoma meeki* showing typical furuncle and necrotic lesion.

3. AETIOLOGY

The aetiological agent of this disease is *Aeromonas salmonicida*. It is a Gram negative, aerobic bacillus which is asporogenous and nonmotile. This species belongs to the family, *Pseudomonadaceae*.

4. DIAGNOSIS

Although the diagnostic signs are helpful for presumptive disease diagnosis, the positive case diagnosis is made based on the isolation of the causative agent, *Aeromonas salmonicida*. Rapid field diagnosis of this case is also possible by slide agglutination test.

5. TRANSMISSION

The disease causing agent is transmitted through contaminated water, feed and the diseased fish. Vertical transmission of this disease is not proved.

6. HOST AND GEOGRAPHIC RANGE

Fresh water and marine species of finfishes belonging to various genera are found susceptible. The disease is found to be world wide in occurrence and is recorded from various countries such as Australia, Bulgaria, Canada, Denmark, England, France, Germany, Hungary, India, Ireland, New Zealand, Poland, Scotland, Sweden, Rumania, U. S. A. U. S. S. R., and Yugoslavia.

7. CONTROL

This disease can be prevented or controlled by adopting suitable prophylactic measures. Environmental

manipulation, breeding resistant varieties, oral vaccination, maintaining optimum stocking balanced diet, regular disease check up, strict hygiene and proper sanitation are important prophylactic measures.

8. TREATMENT

Antibiotics are quite helpful in treating this disease. Along with feed, a broad spectrum antibiotic (eg. Terramycin) can be administered at a rate of 5 - 10 mg. per 100 gm body weight of the fish, once daily for 7 - 21 days. Intraperitoneal injection of the antibiotic at a level of 0.02 mg per gm body wt. of the fish can also be useful.

9. RECOMMENDATIONS

- A. Eventhough prophylactic chemotherapy can be successful, it is better to avoid such practices since drug resistant pathogens may develop.
- B. Chemotherapy must be the last mode of treatment for saving the stock.
- C. Regular disease check up should be in practice.
- D. The fish suspected to have the disease should be quarantined.
- E. Unhealthy animals should be timely removed.
- F. Diseased animals should not be released for human consumption without proper examination.
- G. Diseased and dead animals should be suitably burried or incinerated.