

LETTER TO EDITOR

AN OUTBREAK OF AEROMONAD SEPTICEMIA IN THE FRY OF THE CATFISH (*CLARIAS MACROCEPHALUS*)

SIR: Septicemia is a common disease condition in cultured fishes. In channel catfish, Plumb(1985) described a condition known as Motile Aeromonad Septicemia (MAS) caused by *Aeromonas hydrophila* which comprised about 60% of disease cases submitted for diagnosis. Varied clinical signs resulted in synonyms of MAS such as hemorrhagic septicemia, infectious dropsy, red sore and rubella (Ribelin and Migaki, 1975; Plumb, 1985). We report an outbreak of aeromonad septicemia in the fry of the catfish (*Clarias macrocephalus*).

A batch of 2-3 week old catfish fry kept in nursery tanks and ponds at the Freshwater Fisheries Research Center, Batu Berendam, Melaka were observed to have stopped feeding, become lethargic and had a marked reddish discoloration of skin at the ventral abdomen. Some also had frayed fins, skin ulcers, swollen abdomen and exophthalmus. The affected fry would remain suspended motionless vertically below the water surface, later wriggle back to the bottom flapping the opercula vigorously. By that time, death quickly followed. The mortality rate was over 80%.

The affected fry showed marked congestion of the internal organs. Clinically affected fry were sampled for bacteriology and histopathology. Trypticase Soy Agar and Brain Heart Infusion media were used for bacteria isolation from the blood and visceral organs. Biochemical tests and identification of cultured bacteria were conducted using the keys of Plumb and Bowser (1983).

Whole freshly killed fry were fixed in 10% buffered formalin, processed and stained with hematoxylin and eosin. The prepared histological slides were then examined microscopically for pathological changes.

Almost 95% of the bacteria isolated were pure cultures of *Aeromonas hydrophila*. The remaining bacteria comprised *Pseudomonas spp.* either singly or mixed with *A. hydrophila*.

Histologically, there was severe congestion of most organs particularly the brain, liver and gills. The molecular and granular layer of the cerebellum were severely congested while the meninges had generalised petechiations. The liver showed acute cytoplasmic swelling and eosinophilia of the hepatocytes while mild changes of tubulonephrosis were present in the kidneys. In the gills, the capillaries in the primary and secondary lamellae were engorged distorting the shape of the secondary lamellae.

The septicemia we observed in the catfish fry is similar to the condition observed in the channel catfish (Plumb, 1985). The marked vascular congestion observed is consistent with septicemia. *A. hydrophila* was the incriminated causative agent which had provoked an increase in the blood supply to various organs. The severe accumulation of blood and tissue fluids had resulted in exophthalmus or dropsy. Behavioural changes in the swimming pattern which appeared as the infection progressed was likely due to congestion and depression of balance control centres in the brain. The eventual disruption of active exchange of dissolved gases and osmoregulation caused respiratory embarrassment resulting in the vigorous flapping of the opercula.

Aeromonad septicemia in *Clarias* fry is an important condition considering the high mortalities it can cause. Rapid diagnosis is therefore important to effect immediate control measures. The ease in culturing the aeromonad and the remarkable gross changes aid in arriving at a rapid definitive diagnosis.

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