Isolation and Identification of Pseudomonas fluorescens from Hatchery-Reared Tilapia fry (Oreochromis niloticus Linnaeus)

R.C. Duremdez and G.D. Lio-Po

Bacterial infections caused by *Pseudomonas* sp. are widely reported among cultured aquatic organisms. In the Philippines, initial report of *Pseudomonas* sp. infections occurred among hatchery-reared tilapia fry, *Oreochromis niloticus* Linnaeus. Undue stress due to crowding and handling enhanced the development of the disease. The causative agent was identified as *Pseudomonas fluorescens*.

Pseudomonas fluorescens is a Gram-negative, rod-shaped bacterial species with flagellar filaments for active motility. It produces greenish to yellowish diffusable pigments on selective agar medium such as Pseudosel Agar. Growth and viability of this bacterium is maintained in optimum freshwater conditions for more than 150 days while viability in brackishwater situations is limited to 50 days only. Sea-water medium is not tolerated by this bacterium. This species is thus able to survive and thrive only in freshwater and brackishwater fish culture systems under optimum temperature (25°-30°C).

Ps. fluorescens has been frequently reported to occur predominantly in the tissues and internal organs of healthy and diseased freshwater fishes such as *Oreochromis niloticus*. The rearing water, likewise, contained predominantly the same genus of the bacteria. Since this bacterial species appears almost always in an aquatic environment, it is likely to infect the fish under adverse environmental conditions. Undue exposure of the cultured fish to stress brought about by sudden environmental changes and poor rearing conditions such as overcrowding can cause deterioration of water quality parameters. This condition triggers increased bacterial load in the water and eventually weaken the fish. Evidence also shows that most outbreaks of infectious diseases are associated with stress. Such situations coupled with the ability of *Pseudomonas* to thrive longer in an aquatic environment may explain occurrences of *Pseudomonas* infections in aquaculture systems. ●

R.C. Duremdez is a Research Associate while G.D. Lio-Po is a Scientist of SEAFDEC Aquaculture Department.

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