

Isolation and Characterization of Bacteriophages Against *Aeromonas* Spp. Mediated Diseases in Indian Aquaculture

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Abstract : Aquaculture uses a variety of broad spectrum antibiotics to manage and prevent a variety of diseases without understanding their mechanisms of action. This has led to water pollution in the modern world. The necessity for alternate control measures against bacterial illnesses in the aquaculture sector is highlighted by issues brought on by antibiotic-resistant bacteria and the dearth of effective control strategies. Bacteriophages (phages) have shown promise as therapeutic agents for the efficient management of bacterial infections in aquaculture. In the current study, a variety of investigations were conducted to determine if utilizing lytic phages to reduce *Aeromonas* spp. infection in fish aquaculture was appropriate. Motile *Aeromonas* septicaemia is a fish disease that has caused financial harm to the aquaculture sector. Currently, the production of aquaculture depends significantly on antibiotics, which adds to the worldwide problem of the rise of bacteria that are resistant to medicines and resistance genes. To decrease the usage of antibiotics in aquaculture systems, it is crucial to create efficient antibiotic substitutes. Bacteriophages are capable of acting as a natural antagonist, mostly because of their great specificity, capacity for self-replication, and ability to quickly eradicate dangerous bacteria. There is a need for research that goes beyond just isolating and characterising lytic bacteriophages to examine their morphology, stability, and efficacy in various environmental conditions. Bacteriophage (or phage) therapy is a promising technique to control dangerous microbes in farmed fish. More phage therapy research in aquaculture is required in order to effectively employ phage treatment to lessen infection in fish brought on by *Aeromonas*.

Keywords : aquaculture, bacteriophages, fish, freshwater

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