

## Inadequacy of Adopting Critical Bio Security Measures and Best Management Practices in Sri Lankan Shrimp Hatcheries -is Controlling *Vibrio* a Critical Bio Security Measure?

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Critical bio security measures and best management practices (BMPs) are suggested to prevent occurrence of common diseases and to reduce mortality of larvae in tropical shrimp hatcheries. White spot syndrome virus (WSSV) disease has been the major killer disease in cultured shrimp, *Penaeus monodon* in most shrimp farming, tropical countries including Sri Lanka. A questionnaire survey was used to find out the critical bio security measures and best management practices that are adopted/not adopted in 34 shrimp hatcheries, located in the North Western Province of Sri Lanka. The questionnaire survey revealed that most of the suggested critical bio security measures and BMPs are not properly employed while some are not employed at all in Sri Lankan shrimp hatcheries. WSSV free brood stocks are used as a critical bio security measure in obtaining fertilized eggs in all shrimp hatcheries. If the percentage survival is less than 30, such larval stocks are discarded from hatcheries as a best management practice. Monitoring and controlling *Vibrio* (that causes vibriosis in shrimp) in rearing water is one of the suggested bio security measure which is not done regularly in Sri Lankan hatcheries. Therefore, total *Vibrio* count in rearing water was determined by spread plate technique over a production cycle of post larvae in four randomly selected shrimp hatcheries in the North Western Province. *Vibrio* species were identified using standard microbiological and biochemical tests. Water samples collected from different culture facilities and accessory facilities of the four hatcheries were used to determine the sources of contamination. Results revealed that *Vibrio* count could increase up to  $1.7 \times 10^4$  CFUml<sup>-1</sup> causing heavy mortality of post larvae due to vibriosis. *Vibrio alginolyticus*, *Vibrio fluvialis* and *Vibrio vulnificus* were isolated from water in larval rearing tanks. Brood stocks and *Artemia* nauplii (offered as food for larvae) are the major sources of *Vibrio* contamination. Monitoring and controlling *Vibrio* populations in rearing water is a critical bio security measure that has to be adopted in shrimp hatcheries in Sri Lanka.