

Production of WSSV, MBV and *Vibrio* Free Good Quality Post Larvae of Shrimp, *Penaeus monodon* without Using Broad Spectrum Antibiotics

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White spot Syndrome virus (WSSV), Monodon Baculo Virus (MBV) and *Vibrio* species cause mass mortality of shrimp larvae in hatcheries. A questionnaire survey revealed that WSSV free brood stocks are used in Sri Lankan shrimp hatcheries to prevent vertical transmission of the virus; however, brood stock is not screened for MBV and broad spectrum antibiotics are added to water in larval rearing tanks to control *Vibrio*. The present study investigates whether WSSV, MBV and *Vibrio* free, good quality, post larvae of shrimp, *Penaeus monodon* could be produced without using antibiotics. Experimental brood stocks were individually transported in good quality water, quarantined and screened for WSSV and MBV individually and maintained in water with a probiotic (*Bacillus subtilis*) while control brood stocks were transported, screened and maintained in groups. Fertilization rate and hatching rate recorded for the eggs obtained from experimental brood stocks were significantly higher (81% and 74% respectively) than those were recorded for the eggs of control group (58% and 52%; $P < 0.05$). Quality score and survival rate recorded for experimental larvae reared in probiotic added water, fed with disinfected *Artemia* nauplii were higher (97% and 81% respectively) than those were recorded for the larvae in positive control (reared with antibiotics and fed with non-disinfected *Artemia* nauplii ; 92% and 78% respectively). All the larvae in negative control (no treatment) died at mysis stage when the *Vibrio* count in water reached 8×10^3 CFU ml⁻¹. At P₁₅ stage experimental larvae were WSSV and MBV free and free of pathogenic *Vibrio*. More than 12% larvae were positive for MBV in positive control group and those larvae had a high *Vibrio* count including pathogenic *Vibrio*. Maintaining brood stocks and larvae in water containing a probiotic and feeding the larvae with disinfected *Artemia* nauplii could significantly improve the quality and survival rate of larvae of *P. monodon* in hatcheries.