Kumara, K.R.P.S.
Hettiarachchi, M.
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Isolation and identification of *Vibrio* species that cause vibriosis in shrimp (*Penaeus monodon*) larvae and its prevention/control using a locally produced probiotic

K.R.P.S. Kumara & M. Hettiarachchi
Department of Zoology, University of Kelaniya

Though Sri Lankan shrimp hatcheries use UV sterilized sea water, significant mortalities occur at different larval stages due to vibriosis, if antibiotics are not used to prevent/control it. The present study investigates the sources of contamination, to isolate and identify species of *Vibrio* and to find out whether vibriosis could be prevented /controlled by a locally produced probiotic containing *Bacillus subtillis.*

Total *Vibrio* count in incoming water and in different culture facilities was determined, and species of *Vibrio* isolated from twenty randomly selected shrimp hatcheries were identified. Rearing tanks of two groups of experimental hatcheries were maintained with a probiotic at a concentration of 1×10^{6}CFUml^{-1} *Bacillus subtillis*; larvae in one group (E1) were fed with disinfected *Artemia* nauplii and those in the other (E 2) were fed with non-disinfected *Artemia* nauplii. Rearing tanks in hatcheries of positive control group were maintained with antibiotics and tanks in negative control group did not receive any treatment; larvae in both controls were fed with non-disinfected *Artemia* nauplii.

According to the results, brood stocks and *Artemia* nuaplii were the major sources of *Vibrio* contamination. *Vibrio mimicus, Vibrio vulnificus, Vibrio parahaemolyticus, Vibrio alginolyticus and Vibrio fluvialis* were isolated; when the total *Vibrio* count reached 1.7×10^{4} CFUml^{-1} heavy larval mortalities occurred. Mean total *Vibrio* count in larval rearing water of experimental group, E 1 was the lowest (1.1×10^{3}CFUml^{-1}) with the highest quality score for Pl_{15} and survival rate (97% and 81% respectively), compared to experimental group, E 2 and the positive control; larvae in negative control died at mysis stage. The probiotic used could control vibriosis in shrimp larvae.