INVESTIGATION OF MORTALITY IN *MACROBRACHIUM ROSENBERGII* LARVAE ASSOCIATED WITH HATCHERY MANAGEMENT AT UNIVERSITI PUTRA MALAYSIA MARINE SCIENCE RESEARCH CENTRE, PORT DICKSON, MALAYSIA

Noorashimah Roslim & [1,2]Hassan Hj. Mohd Daud
[1]Department of Veterinary Clinical Studies
[2]Wildlife Research & Conservation Centre
Faculty of Veterinary Medicine
Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia

Abstract

Since the middle of year 2011, high mortalities in *Macrobrachium rosenbergii* larvae at Universiti Putra Malaysia Marine Science Research Centre, Port Dickson, Malaysia were regularly observed, which had caused severe economic losses. This research was carried out to investigate the biological and non-biological factors in the hatchery that contributed to disease development in order to postulate the relationship of the factors involved in larvae mortality and to examine the appropriate culture management approach to reduce mortality. Six experimental trials were carried out, namely physical examination of water quality parameters in the hatchery, microbiological studies of culture water, larvae, feed (including *Artemia nauplii*, egg custard, and blood cockles), and parasitological and mycological studies of culture water and larvae in hatcheries. The samples were taken twice a week. Physical quality of water was checked twice a day, in morning and evening using portable hand-held water quality kit. For bacteriology study, the isolation of bacteria were done using TSA and TCBS agar and identification using commercial test kits, BD BBL Crystal™ and API 20E™. Methylene blue stain was used for routine parasitology and mycology studies. The water quality in all tanks were within the recommended range, where the temperature was between 28 - 31°C for larvae and 27 - 32°C for brood stock. The pH for brood stock culture was between 7 – 7.2 while for the larvae it was between 7.2 – 7.4. The salinity ranged between 12 – 16 ppt for larvae and 3 – 5 ppt for brood stock. Two main bacteria were isolated during this study, which were *Aeromonas hydrophila* type II and *Bukholderia cepaciae*. *A. hydrophila type* II, *B. cepaciae and Enterobacter* spp. were normal flora of water and also opportunistic bacteria but could cause septicaemic diseases. No parasite or fungus was detected. In conclusion, early mortality in *M. rosenbergii* prawn larvae was closely related to hatchery management i.e. the use of green water system, feed preparation and sanitary procedures.

Keywords: *Macrobrachium rosenbergii*, larvae, water quality, *Artemia*, egg custard, blood cockles, *A. hydrophila* type II, *B. cepaciae*