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Enumeration, Isolation and Antibıotic Sensitivity of Vibrios ın Post-Larvae of *Macrobrachium rosenbergii*

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In Sri Lankan reservoirs, culture-based fisheries of the *Macrobrachium rosenbergii,* Giant Freshwater Prawn (GFP) have been established, making the inland fishery an economically important component. Scientists are investigating the reason for the low *M. rosenbergii* production comparison to its stocking density. This reduced output might be due to associated bacteria and their pathogenicity. This study focused on enumeration of total bacteria and total Vibrios count and isolation Vibrios present in the *M. rosenbergii* postlarvae collected from five different larval rearing tanks (PL-S1, PL-S2, PL-S3, PL-S4 and PL-S5) at Freshwater Prawn Breeding Centre, Kahandamodara and investigating the sensitivity of selected Vibrios to commonly used antibiotics viz Chloramphenicol (30 µg), Ciprofloxacin (30 µg), Tetracycline (30 µg), Gentamicin (30 µg), and Ampicillin (30µg). Five postlarvae samples, each comprising 30 individuals, were obtained from five separate tanks and all the samples were homogenized separately. Samples were inoculated on standard plate count agar (PCA) plates and Thiosulfate Citrate Bile Sucrose (TCBS) plates respectively to estimate the total plate count (TPC) and total *Vibrio* count (TVC) by spread plate method. Bacterial colonies grown on TCBS were isolated and confirmed as *Vibrio* sp using a battery of biochemical tests and according to the methods and keys given in Alsina and Blanch, (1994) and Bergey's manual of determinative bacteriology. Then the antibiotic sensitivity of bacteria associated with postlarvae was investigated using the Kirby- Bauer disk diffusion technique. The study revealed that the total bacterial count and the total *Vibrio* count varied among different tanks. TPC ranged from 10.61Log CFU/g±0.24 to 6.25Log CFU/g ±0.18. Furthermore, the significantly highest number of bacteria was present in PL-S1 (10.61LogCFU/g±0.24) and the lowest number of bacteria was present in PL-S5 (6.25 Log CFU/g ±0.18), whereas the TVC ranged from 3.29 LogCFU/g ±0.01 to 2.41 LogCFU/g ±0.06 and the significantly highest total *Vibrio* count was observed on PL-S3, PL-S4 and, PL-S5 (3.21 Log CFU/g ±0.02, 3.14 Log CFU/g ±0.09, 3.30 Log CFU/g ±0.01) whilst the lowest *Vibrio* abundance was recorded in PL-S1 (2.41 Log CFU/g ±0.06). Further, it revealed that out of the total bacteria, Vibrios consisted of a considerable percentage. All isolated colonies were identified and confirmed as *Vibrio sp*. Antibiotic sensitivity testing experiment revealed that all the isolates were 100%

resistant to Ampicillin followed by 67.5% intermediate resistance to Gentamycin. Isolates were sensitive to Chloramphenicol, Ciprofloxacin and Tetracycline. This study concluded that post-larvae of *M. rosenbergii* have various abundances of total bacteria and *Vibrio*. Also, concluded that some of Vibros developed resistance against some commonly used antibiotics as therapeutics whereas some of the antibiotics are effective against the isolated Vibrios.

Keywords: Antibiotic resistance, Post larvae, Total plate count, Total Vibrio count