

Effects of rotifer and *Artemia* enrichment in the first feeding and larval morphogenesis of purple mud crab, *Scylla tranquebarica* larvae

ABSTRACT

The effects of feeding rotifers and *Artemia* enriched with different types of enrichment in the first feeding and later stages of *Scylla tranquebarica* larvae were investigated. Two different experiments were conducted each with five enrichment treatments including live and digestible *Nannochloropsis* sp. and *Tetraselmis* sp. or commercial product. In Experiment I, the zoea 1 (Z1) larvae were fed with enriched or unenriched rotifers as their first feed until they moulted into the zoea 2 (Z2) stage, while in Experiment II, the zoea 3 (Z3) larvae were fed with enriched or unenriched *Artemia* until they metamorphosed into megalopa stage. In Experiment I, Z1 fed enriched rotifers showed higher survival, larval stage index (LSI) and carapace length than those in unenriched treatment. However, the highest survival was recorded in larvae fed *Nannochloropsis* sp. treatment. In Experiment II, Z3 fed *Artemia* enriched with digestible *Tetraselmis* sp. exhibited the highest survival and LSI, lowest chela-carapace length ratio and abnormal moulting frequencies. In comparison to live microalgae, digestible treatment resulted in a smaller chela-carapace length ratio with lower abnormal moulting. In conclusion, enrichments tested in this study can be used to enrich rotifers for the first feeding of Z1, while later stage (Z3 onwards) fed *Artemia* enriched with digestible *Tetraselmis* sp. improved survival and decreased the abnormal moulting frequencies of Z5 to megalopa stage.