

**Use of microalgal-enriched *Diaphanosoma celebensis* Stingelin, 1900 for rearing *Litopenaeus vannamei* (Boone, 1931) postlarvae**

ABSTRACT

The present work investigates the effects of *Chaetoceros calcitrans*, *Nannochloropsis oculata*, *Tetraselmis tetrahele* and *Isochrysis galbana* diets on the lifespan, growth, neonate production and the nutritional profile of *Diaphanosoma celebensis*. In addition, the effects of enriched *D. celebensis* on the survival and growth of *Litopenaeus vannamei* postlarvae (PLs) was compared with *Artemia*. Results showed that significantly higher ( $P < 0.05$ ) neonate production of *D. celebensis* was attained when fed with *C. calcitrans* compared to the other microalgae. In addition, *D. celebensis* fed on *C. calcitrans* had significantly higher levels ( $P < 0.05$ ) of protein, lipid and carbohydrate compared to the other three microalgae. On the other hand, *D. celebensis* had a significantly ( $P < 0.05$ ) longer lifespan when fed on *N. oculata* and *T. tetrahele* compared to those fed with *C. calcitrans* and *I. galbana*. Shrimp PLs fed *D. celebensis* enriched with *C. calcitrans* had higher survival and specific growth rate but it was not significantly different ( $P > 0.05$ ) from PL fed only *Artemia*, indicating that *D. celebensis* has potential to be used as live feed for the hatchery rearing of *L. vannamei* PLs, in place of *Artemia*. This study illustrated that the quality of the *D. celebensis* production and proximate composition was highly correlated with the food type, and it can be used as a valuable live feed for shrimp larviculture.

**Keyword:** *Diaphanosoma*; Growth; *Litopenaeus vannamei*; Microalgal diets; Neonate production; Proximate composition.