

## **Effect of different frozen fresh diets to broodstock growth, reproductive performance and larvae of cleaner shrimp, *Lysmata amboinensis***

### **ABSTRACT**

**Aim:** To evaluate the effects of different frozen fresh diets of frozen mussel, squid, polychaetes and the mixture of all feeds) to *L. amboinensis* broodstock. **Methodology :** Four diets, comprised of squid (*Loligo* sp.), mussel (*Perna viridis*), polychaetes (*Marphysa amoribidii*) separately, as well as the mixture of all four separately were fed to *L. amboinensis* brood stocks. The results were evaluated based on the biochemical compositions (proximate analyses and fatty acid composition of feed), broodstock conditions (survival and growth), reproductive performances (egg cover under abdomen (%), egg fecundity and viable fecundity) and larval quality (morphometric measurement). **Results :** Mussel diet produced the highest number of larvae, followed by polychaetes and mix diets. On the contrary, broodstock nourished with squid diet had suffered a heavy loss of eggs throughout the incubation period, with lowered larvae production ( $p < 0.05$ ). The results demonstrated a good relationship between the MUFA content in the diet from the egg produced from this cleaner shrimp whereas the level of 22: 6 n-3 (DHA) in the diet exhibited close relation with egg retention throughout the incubation period. **Interpretation :** Broodstock diet influences the egg cover during incubation, egg fecundity, viable fecundity and output in terms of *L. amboinensis* larval morphometric. MUFA has several potential functions in the embryonic development process related to fecundity, while DHA has different functions in early embryogenesis, where it is associated with egg hatchability and larval morphometric of *L. amboinensis*.

**Keyword:** Broodstock; *Lysmata amboinensis*; Reproductive performance; Shrimp