

A novel study on the effect of rapid biofloc as pellet feed on the survival rate and water quality of mud crab, *Scylla olivacea* culture

ABSTRACT

In order to promote the optimum survival rate of mud crab, *Scylla* sp., in crablet culture, green technology approaches must be developed to increase the yield of mud crab production. The application of biofloc in *Scylla* sp. culture was proven successful in promoting a good crablet performance and sustaining a good water quality condition. Therefore, due to its importance, this study aimed to determine the survival rates of *Scylla olivacea* crablets cultured in tanks, fed with pelleted rapid biofloc aggregates. Three feeding trials were conducted consisting of commercial pellet (CP), rapid biofloc pellets (BP) and a mix of rapid biofloc pellets with commercial pellets (BP+CP) and were cultured up to 13 weeks of culture periods. The mud crab crablets were fed twice a day, while water exchanges were only conducted once per week. The survival rates were calculated at the end of the culture period while water quality parameters were regularly monitored. Overall, our findings showed that the survival rate in the BP+CP treatment was the highest with 30%, while 23.3% and 10% in CP and BP treatment, respectively. The water parameter was in optimum range in CP, BP and BP+ CP treatment tanks where pH ranged from 8.19 to 8.26, temperature between 26.68°C to 26.69°C and salinity between 32.17ppt to 33.16 ppt. Ammonium, NH₄ + was below an optimum range with, 0.18mg/L in BP treatment and 0.21 mg/L in BP+CP as compared to CP. Meanwhile, nitrite, NO₂ - was identified below 1mg/L which ranged between 0.07 and 0.08 mg/L. Therefore, it can be concluded that combination of commercial and pelleted rapid biofloc aggregates have the potential capability to increase the survival rate of mud crab crablet culture while sustaining good water quality parameters and nutrient level.