GROWTH ENHANCING POLYMERIC SUBSTANCES FROM PHOTOTROPHIC BACTERIA FOR MARINE FINFISH LARVICULTURE SYSTEM
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ABSTRACT

Study was under taken to isolate phototrophic bacteria from local microhabitat, production of polymeric substances from selected isolate and to evaluate the possibility to be used aquaculture feed additive in marine finfish larvae. Phototrophic bacterium *Afifella marina* was isolated from local mangrove mud. The highest dry cell weight of 4.98 g/l was achieved at 3000 lux, while the highest carotenoid production of 0.78 mg/g dry cell weight was recorded at 2500 lux illumination light intensity. It was also found that extracellular nucleic acid yields of 7.48 mg/g dry cell weight and proteolytic activities of 76.6±1.2 U were the highest in *Afifella marina* recorded at 5000 lux and 3000 lux illumination of light intensity respectively. Current study was also found that no significant differences in dry cell weight, extracellular nucleic acids production and proteolytic activities between 24h (24L/0D) and 18h (18L/6D) of photoperiods. The biomasses of *Afifella marina* were used to encapsulate *Artemia* and feeding trial conducted in sea bass (*Lates calcarifer*) larvae. Increment in the highest growth in length of 166% and survival of 67.5% was observed in the diet composed of *Artemia* encapsulated with *Afifella marina*.