EFFICIENCY OF VARIOUS NURSERY SYSTEMS FOR BIVALVE SEED PRODUCTION

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ABSTRACT

Studies on the efficiency of various bivalve seed nurseries were performed using 5 different systems; i.e. the air-lifted down-flow, pumped upwelling, static, flow-recirculating, and flow-through with a substrate. Hatchery-produced seed of two species of bivalve molluscs, i.e. blood cockle *Anadara granosa* (Linnaeus) and senatorial scallop *Chlamys senatoria* (Gmelin) were used. The growth and survival rate performance of the juveniles obtained from each nursery system were determined.

The results showed that 0.3–1 mm shell length cockle seed raised in an air-lifted down-flow nursery system attained an average daily biomass increase (%DBI) of 11.12±3.66%. The 1–4 mm shell length cockle seed raised in pumped upwelling nursery had an average 3.58±2.19 %DBI. The flow-through with substrate supplement was not suitable for seed smaller than 1 mm size led into poor survival rate below 50%. Comparison on nursing of the same size of cockle seed showed that the seed raised in upwelling nursery obtained higher weight increase (P<0.05) than seed raised in air-lifted down-flow and flow-through with substrate supplement systems. Survival rates were not significantly different in every system (P>0.05). Scallop spat of 1 month old (0.92±0.14 mm shell height) raised in static and flow-recirculating systems for 3 weeks showed no significant difference in growth and survival rates. Growth rates of scallop spat were 0.35 and 0.39 mm week⁻¹ in static and flow-recirculating systems, respectively. Survival rates were higher than 80% in both nursery systems.

Keywords: Bivalves, Bivalve seed, Nursery systems, Blood cockle, *Anadara granosa* (Linnaeus), Scallop, *Chlamys senatoria* (Gmelin)

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