Utilization of seawater from milkfish culture pond for bivalve seeds nursery

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Abstract

Utilization of seawater from milkfish pond for rearing of hatchery-produced seeds of bivalve in upwelling nursery system was conducted in two experiments. Firstly, three different set-ups of the nursery system were compared for rearing seeds of two bivalve species, the hard clam *Meretrix meretrix* and the oyster *Crassostrea iredalei*. The bivalve seeds were put in upwelling cylinders of 30 cm diameter with initial density of 10 g/cylinder. In Treatments (T) T1 and T2, the upwelling cylinders were installed in fiberglass tanks filled with filtered seawater for T1, and seawater from milkfish culture pond for T2. Cultured phytoplankton was provided for feeding in both treatments. In T3, the cylinders were hung from floating raft in milkfish culture pond. After 45 days nursing period, the results showed that T3 had significant better growth and production in both bivalve species than T1 and T2 (P<0.05). Hard clams in T3 had survival rate of 72.97±4.11 % which was significantly higher than T2 (P<0.05) but not different from T1 (P>0.05). The oysters in T3 attained the survival rate of 92.24±3.19% which was significantly higher (P<0.05) than those from T1 and T2.

Secondly, the nursery system with upwelling cylinders set on floating raft in milkfish pond was selected for determination of optimum rearing density. Hatchery-produced seeds of hard clam *M. meretrix* and short-necked clam *Paphia undulata* were tested with 4 different initial rearing densities of 10, 20, 40 and 80 g/cylinder. After nursery period of 30 days, the hard clams of the treatment 10 g/cylinder had the mean weight gain of 0.84±0.09 g/day/cylinder and survival rate of 50.86±2.13 % which were significantly higher (P<0.05) than the treatments 40 and 80 g/cylinder but not differed (P>0.05) from 20 g/cylinder. The short-necked clams from the treatment 10 g/cylinder gained highest growth of 2.80±0.07 g/day/cylinder and survival rate of 88.89±0.19 %, which were significantly different from other treatments (P<0.05).

Key words: bivalve seeds, rearing, nursery system, seawater from milkfish culture pond

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