Rearing of Grouper (*Epinephelus coioides* Hamilton, 1822) from Juveniles to Marketable Size in Recirculating Aquaculture System

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Abstract

The rearing of grouper in Recirculating Aquaculture System (RAS) was conducted to test the effects of density and flow rate on growth of grouper (*Epinephelus coioides*). The study was divided into 2 parts: part 1 density of 30, 40, 50 and 60 inds/m³ were tested in 5 m³ of fiber tank and part 2 the flow rates of 750 and 500 % were tested. The experiments were conducted for 8 months by using formulated feed 5 months and fresh feed 3 months. Initial average body weight of each group was 125.7 ± 35.8 g and average initial total body length was 19.5 ± 2.2 cm.

Part 1 Results showed that absolute growth rates were 3.12, 2.62, 2.41 and 3.55 g/day, food conversion rates were 1.82, 1.70, 1.74 and 1.64 formulated feed were 3.43, 4.21, 3.98 and 2.76 for the fresh feed. The survival rates were 88.7, 90.0, 91.5 and 87.7% while productions were 20.0, 22.6, 26.4, and 44.8 kg/m³ respectively. Body weight gain, absolute growth rate, survival rate and FCR of 4 densities were not statistically different (P>0.05) but production was significantly different (P<0.05).

Part 2 Results showed that absolute growth rates were 2.62 and 2.95 g/day, food conversion rates of formulated feed were 1.70 and 1.14 and fresh feed were 4.21 and 3.51. The survival rates were 90.0 and 90.1% and productions were 22.6 and 25.6 kg/m³ respectively. Body weight gain, absolute growth rates, survival rate and production of 2 flow rates were not statistically different (P>0.05) but FCR of formulated feed was significantly different (P<0.05).

The results from our experiment that Rearing of grouper from juveniles to average body weight 977.4 ± 73.1g in density of 60 inds/m³ and flow rate at 500 % probably are the suitable condition for the rearing of grouper to the marketable size in recirculating aquaculture system.

Key words: Flow rate, Density, Recirculating Aquaculture System, Growth rate, Grouper

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