

EFFECTS OF WATER CIRCULATION AND REARING DENSITY ON GROWTH AND SURVIVAL RATES OF SPINY EEL (*Mastacembelus Armatus*) FROM FRY TO FINGERLING STAGE

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Summary

This study was performed to investigate the effects of the three different rearing densities (1,000; 1,500 and 2,000 ind./m³) on growth and survival rates of spiny eel (*Mastacembelus armatus*) reared from fry to fingerling stage in a recirculating system. Results showed that after 30 days of rearing, the relative growth rate in mass of the fish reared at the density of 1,000 ind./m³ (12.3%) was higher than that of the 2,000 ind./m³ density (11.5%; $p < 0.05$) but not significantly different from that of the 1,500 ind./m³ density (12.01%; $p > 0.05$). Results showed that after 60 days of rearing, the fish mass and length in the three treatments (1,000; 1,500 and 2,000 ind./m³) were 2.72 g (9.66 cm), 2.32 g (9.29 cm), and 2.13 g (8.98 cm), respectively. The relative growth rate in mass of the fish reared at the density of 1,000 ind./m³ (9.38%) was higher than that of the 2,000 ind./m³ density (8.95%; $p < 0.05$) but not significantly different from that of the 1,500 ind./m³ density (9.13%; $p > 0.05$). Similarly, the relative growth rate in length of the fish reared at the density of 1,000 ind./m³ was higher than that of the density of 2,000 ind./m³ (3.78% as opposed to 3.66%; $p < 0.05$) but not significantly different from that of the density of 1,500 ind./m³ (3.71%; $p > 0.05$). The survival rate of the fish reared at the density of 1,000 ind./m³ (97.3%) was higher than that of the density of 1,500 ind./m³ (93.2%; $p < 0.05$) and 2,000 ind./m³ (91.6%; $p < 0.05$). From the results of this study, it can be recommended that the suitable density for rearing the spiny eel from the stage of fry to fingerling is 1,000 ind./m³ in order to optimize the growth and survival rate.

Keywords: *Mastacembelus armatus*, spiny eel, rearing density, growth rate, survival rate, water circulation.