ID: 472

Effect of stocking density on crablets nursing performance and assessment of growth comparison between wild-sourced and hatchery-sourced juvenile crabs

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Mud crab (*Scylla olivacea*) farming has gained popularity in Bangladesh but most farmers depend on wild juveniles for stock establishment. This dependency on wild sources for juvenile crabs is the key challenge for sustainable crab aquaculture. Hence, this study aims to assess the effect of stocking densities on the growth and survivability of crablets in the nursing pond and the growth comparison of wild and hatchery-sourced juvenile crabs in farming ponds. Thus, two separate experimental trials were conducted in a Randomized Complete Block design to determine the effective stocking density for crablets nursing and to compare the performance of wild and hatchery-sourced juveniles for aquaculture practices. Three different stocking densities (T1=1000 ind/decimal, T2=1500 ind/decimal, and T3= 2000 ind/decimal) were treated for seven weeks for the first experiment to compare the result of growth variables (body weight, carapace width, carapace length, and abdominal width) and survivability percentages. The study results showed that growth variables and survivability rate varied significantly ($p < 0.05$) in different weeks. However, at harvest, the highest body weight (27.33 ± 1.53 g), carapace width (55.17 ± 1.04 mm), carapace length (41.67 ± 0.58 mm) abdominal width (25.50 ± 0.50 mm), and survivability rate (58.10%) was observed at T1 stocking density. However, the highest survivability 60.67% was observed with hatchery-sourced juvenile crabs. The study explored that stocking density T1(1000 ind/decimal) is the most suitable density for crablets nursing in ponds, and the hatchery-sourced juvenile was better than that of wild-sourced juvenile for crab aquaculture practices.

Tabe 1. Effects of stocking densities on growth and survivability performance of crablets at harvest

Stocking Density	Body Weight (g)	Carapace Width (mm)	Carapace Length (mm)	Abdominal Width (mm)	Survivability (%)
T1	27.33 ± 1.53a	55.17 ± 1.04a	41.67 ± 0.58a	25.50 ± 0.50a	58.10 ± 3.35a
T2	24.63 ± 0.55b	51.67 ± 1.15b	38.67 ± 1.53b	24.67 ± 0.29b	49.24 ± 3.18b
T3	22.73 ± 0.23c	50.16 ± 2.02b	37.50 ± 0.50b	23.50 ± 0.87c	42.30 ± 3.13c

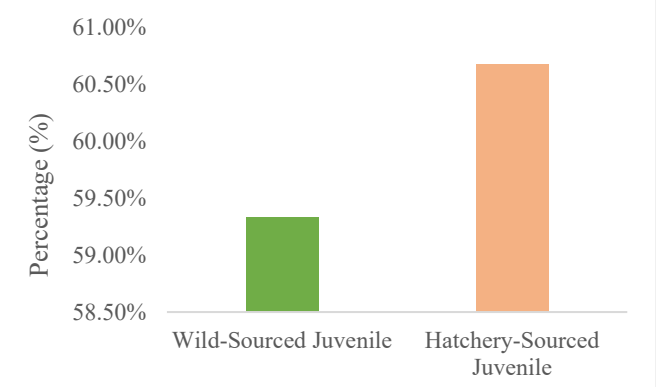

Fig.1 Survivability rate at harvest