Effect of different stocking density on growth, survival on *Litopenaeus vannamei* (Boone, 1931) in summer and monsoon crop in province of Gujarat states in India

Kotiya A.S.[1]*; Vadher K.H. [2]

1-Assistant Professor, Department of Aquaculture, College of Fisheries Science, Junagadh Agricultural University, Veraval, Gujarat, India.
2-Associate Professor, Department of Aquaculture, College of Fisheries Science, Junagadh Agricultural University, Veraval, Gujarat, India.
*Corresponding author's email**:** askotia@jau.in

Abstract

A seasonal crop study of growth performance of Pacific White shrimp, *Litopenaeus vannamei* during summer (S) and monsoon (M) was taken up for 120 days, where stocking density was 30,40,50,60,70 and 80pc/m^2. Experiment was conducted in commercial pond at Kavya Aqua Farm at Datardi (Rajula) of Amreli district in order to observe the following attributes: stocking density, growth, survival rate, and production and water quality parameters. The size of the culture pond was 0.50 ha. Total 22 pond, from the total 18 were culture pond and 2 reservoirs and 2 sedimentation pond. The SPF shrimp seeds were procured from registered hatchery during two different seasons. The initial average body weight of shrimp post larvae during summer and monsoon crop at stocking was 0.06±0.01g and 0.06±0.04g respectively. Mean growth during summer significantly differ among the stocking densities with individual final weights of 26.08±0.05 followed by 23.84±0.27, 19.94±0.07, 18.24±0.43, 16.92±0.23 and 14.61±0.49g and yields of 3721.5±68.4, 4440.5±125.1, 4548.05±56.9, 4948.4±96.4, 5064.8±82.1 and 4792.4±211.4 kg/pond at 30,40,50,60,70 and 80 shrimp/m^2 respectively. In contrast, there were statistically significant differences in mean growth and final yields during the monsoon crop. Final mean weights were 34.46±0.24 followed by 31.2±0.31, 28.46±0.12, 25.89±0.35, 20.86±0.11 and 18.20±0.42 g and yields were 5091.6±57.6

followed by 6143.6±67.15, 7457.6±100.9, 7905.06±283.2, 7799.2±277.3 and 7292.6±165.1 kg/pond at 30, 40,50,60,70 and 80 shrimp/m^2 respectively. Better performance of shrimp was recorded in monsoon crop, average water temperatures was 26.17±0.15°C with compare to summer 29.86±0.11°C with low production. Larger shrimp were associated with lower stocking density in both the season while higher stocking density @70 shrimp/m^2 (summer crop) and 60 shrimp/m^2 (monsoon) produced higher yields.

Keywords: Shrimp, Stocking density, summer, Monsoon, Growth, Production.