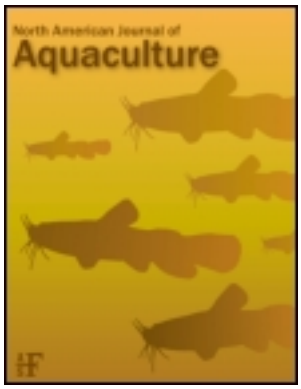

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Effect of Stocking Density on Growth Performance and Yield of Subadult Pacific Red Snapper Cultured in Floating Sea Cages

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COMMUNICATION

Effect of Stocking Density on Growth Performance and Yield of Subadult Pacific Red Snapper Cultured in Floating Sea Cages

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Abstract

A preliminary assessment of growth performance and yield of subadult Pacific red snapper *Lutjanus peru* raised in floating sea cages was conducted by measuring fish length, weight, feed conversion, and survival rate during a 120-d grow-out trial at Punta el Caballo Beach, Nayarit State, Mexico. Nine floating cages (12.5-m^3 capacity) were used as experimental units. Fish were stocked in triplicate treatment cages at 30, 50, and 70 fish/m^3 (1.9, 3.3, and 4.4 kg/m^3, respectively) using more than 5,600 wild subadults (mean initial weight ± SD = 63.9 ± 1.4 g) as initial fish stock. Fish were fed twice per day with a sinking commercial pellet, and dissolved oxygen, temperature, pH, transparency, and ammonia nitrogen in each cage were recorded weekly. After 120 d, the mean individual weight at harvest was inversely related to stocking density. Mean final weight, weight gain, and specific growth rate differed among groups, with the highest values recorded for the 30-fish/m^3 density (233.4 ± 5.3 g [mean ± SD], 1.4 g/d, and 1.1% per day, respectively). Mean final body length, feed conversion, condition index, and survival did not differ among density treatments. Net yield (mean ± SD) ranged from 5.0 ± 0.2 kg/m^3 (30-fish/m^3 treatment) to 7.9 ± 0.3 kg/m^3 (70-fish/m^3 treatment) and differed among the treatments. Considering the initial biomass and density, the 70-fish/m^3 treatment produced a higher total biomass (mean ± SD = 152.9 ± 2.4 kg) but a lower average weight than the 50- and 30-fish/m^3 treatments. Our findings suggest that at all stocking densities tested, subadult Pacific red snapper will grow in floating sea cages without significant mortalities. A benefit–cost analysis must be achieved to define the best treatment in economic terms.

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