Stocking density effect on the growth of the juvenile blue mussel, *Mytilus edulis,* within an aquaculture system

The blue mussel*, Mytilus edulis,* is an economically important bivalve that is successfully cultured. One aspect of aquaculture operations that continues to need improvement is the length of time it takes for juvenile mussels, known as spat, to be transplanted from a hatchery environment to an ocean culture. Aquaculture operators seek high growth rates to decrease the time spent in a nursery setting. To achieve the optimum between duration in culture and growth rates, mussels need to be stocked at an ideal density because density affects growth rate. This study investigated how stocking density affects hatchery-raised juvenile *M. edulis* growth rates. Using hatchery trays to simulate an aquaculture environment, juvenile mussels were subjected to three different stocking densities (5,000, 10,000, and 15,000 individuals per tray or 18,215, 36,430 and 54,645 mussels m^{-2}, respectively) and shell lengths were measured after one and two months to determine whether the stocking density among the three treatments were significantly different. Analyses found significant differences in shell length among all density treatments with the highest density having the lowest growth rate. This research can be used by aquaculturists to increase the growth efficiency of mussels and decrease the amount of time mussels spend in the aquaculture facilities.

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