

EFFECTS OF STOCKING DENSITY ON THE GROWTH AND SURVIVAL OF JUVENILE SILVER-LIP PEARL OYSTERS (*PINCTADA MAXIMA*, JAMESON) IN SUSPENDED AND BOTTOM CULTURE

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Abstract

Growth and survival of juvenile silver-lip (or gold-lip) pearl oysters, *Pinctada maxima*, were compared at two stocking densities (28 individuals per net: 66 oysters per m² or 48 individuals per net: 99 oysters per m²) with animals held in either suspended or bottom culture. The experiment was terminated during the sixth week because of high mortality in bottom-cultured pearl oysters. Mean (\pm SE) survival in 28-pocket nets in suspended culture ($99.0 \pm 1.6\%$) was significantly better than that in any other treatment ($p < 0.01$). Survival was also high in the 48-pocket nets in suspended culture ($94.8 \pm 3.6\%$). Mean survival in bottom culture was significantly lower ($p < 0.05$), being 15.8 ± 7.8 and $13.3 \pm 3.6\%$, respectively, for 28 and 48-pocket nets. *P. maxima* held in suspended culture grew significantly larger ($p < 0.001$) than those in bottom culture. In both suspended and bottom culture, *P. maxima* in the 28-pocket nets grew larger ($p < 0.001$) than those held in 48-pocket nets. Additionally, pearl oysters held in bottom culture had brittle shell margins. These results indicate that culture system had a greater influence on growth and survival than stocking density. Differences in the availability of food are believed to be the major influence on the results obtained; the dry weight of suspended solids, phytoplankton biomass, and phytoplankton diversity were all greater in surface waters.

Keywords: pearl oyster, *Pinctada maxima*, suspended culture, bottom culture, growth, stocking density, pocket nets