

Effects of mesh covers on the growth and survival of silver-lip pearl oyster (*Pinctada maxima*, Jameson) spat

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Abstract

Spat of the silver-lip (or gold-lip) pearl oyster, *Pinctada maxima*, were re-settled onto PVC slats at a mean density of 340 per 100 cm². Spat had a mean (\pm s.e.) dorso-ventral shell height and antero-posterior shell length of 1.2 ± 0.3 -mm and 1.8 ± 0.5 -mm, respectively. The PVC slats were either left exposed (control) or covered with a mesh sleeve of varying aperture sizes (0.75, 1.5 or 3.0-mm) before being transferred to an ocean-based suspended nursery culture system. After two weeks of nursery culture, there was no significant difference ($P > 0.05$) among the number of spat retained on the covered slats; however, all covered slats had significantly greater ($P < 0.001$) spat retention than the control which had fewer than 1 spat per 100 cm². Some of the spat in the control treatment may have been eaten by box fish (Ostraciidae) and file fish (Monacanthidae) which were observed pecking at the exposed PVC slats. Shell height and shell length increased significantly ($P < 0.05$) with each increase in mesh size. The remaining spat on the control slats were smaller than the mean size of the spat at the start of the trial although this difference was not significant ($P > 0.05$). This probably resulted from fish and other predators preferentially attacking the larger individuals. There was no advantage in using sleeves with a mesh size small enough to retain dislodged spat. The majority of dislodged spat in the 0.75-mm and 1.5-mm mesh sleeves perished when they fell into the corners of the sleeve whereas most dislodged individuals were small enough to fall through the 3.0-mm mesh sleeve. A 3.0-mm mesh is appropriate to house spat of the size used in this study. Smaller mesh sizes, while not affecting

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