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Assessment of artificial substrates for collection of hatchery-reared silver-lip pearl oyster (*Pinctada maxima*, Jameson) spat

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Abstract

This paper reports on three experiments in which artificial substrates were assessed for the collection of hatchery-reared silver-lip (or gold-lip) pearl oyster, *Pinctada maxirna* (Jameson), spat. In the first experiment, pediveliger larvae were settled onto collectors made from a variety of materials: curved PVC slats; polypropylene rope; a combination of PVC slats and polypropylene rope; and monofilament nylon. After 37 days, the rope and the combined PVC slat and rope collectors had significantly higher numbers of spat ($P < 0.05$) than either nylon or PVC slat collectors. In a second experiment, PVC slat collectors were placed in a larval settlement tank in either a horizontal or vertical orientation. Significantly greater numbers of spat ($P < 0.001$) were observed on horizontally positioned PVC slat collectors than on collectors positioned vertically. Regardless of orientation, the concave surface of PVC slats had significantly higher ($P < 0.001$) numbers of spat than the convex surface. In the third experiment, collection of *P. maxima* spat was compared between PVC slats with or without an epifloral biofilm. Significantly more ($P < 0.001$) spat attached to PVC slats with a biofilm than clean PVC slats. These results indicate that the choice of collector material, the surface orientation of collectors and method of collector preparation can optimise the collection of hatchery-reared *P. maxima* spat.

Keywords: Pearl oyster; *Pinctada maxima*; Spat collector; Settlement; Spat

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