

# Larval and spat culture of the Western Australian silver- or goldlip pearl oyster, *Pinctada maxima* (Jameson)(Mollusca: Pteriidae)

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## Abstract

The larvae of *Pinctada maxima* were fed Tahitian *Isochrysis galbana*, *Chaetoceros calcitrans*, *C. gracilis* and *Nannochloropsis oculata*. Food concentrations for larvae were increased gradually from 0.2-2 algal cells •  $\mu\text{l}^{-1}$  on day 1 to 20-40 cells •  $\mu\text{l}^{-1}$  on day 30. Initial stocking densities of 1-8 larvae •  $\text{ml}^{-1}$  were reduced to 0.5-1 larvae •  $\text{ml}^{-1}$  at settlement. For 70% of the population, settlement began on day 24 and lasted up to 7 days. Ten to 15% of the population failed to grow appreciably and another 10-15% grew comparatively rapidly, reaching settlement by days 15-17. The smallest spat observed on day 28 was 331  $\mu\text{m}$  shell length (SL) X305  $\mu\text{m}$  shell height (SH). Spat were fed the same phytoplankton as the larvae, as well as *Tetraselmis chuii* twice daily at 40-285 cells  $\mu\text{l}^{-1}$  over 5 months. Spat reared in downwellers at densities of 4 and 25 individuals  $100\text{ cm}^{-2}$  grew 9.6 and 6  $\text{mm} \cdot \text{mth}^{-1}$  SH, respectively. Those reared in plastic cages at sea at densities of 3 and 7 individuals •  $100\text{ cm}^{-2}$  grew 9.2 and 7.3  $\text{mm} \cdot \text{mth}^{-1}$  SH, respectively. Mortality 5 months after settlement was 1-2% for those reared in the hatchery and 9-12% for those reared at sea. Hatchery-propagated spat were similar in appearance to natural spat and 20-25% were suitable for pearl culture 19 months after fertilization, or when they were 120 mm SH.

**Keywords:** Pearl oyster; Spawning; Larvae; Spat; Growth; Survival

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