

## Spawning Induction and Early Larval Development of the Pacific Thorny Oyster *Spondylus crassisquama* (Lamarck, 1819) under Controlled Conditions

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### Abstract

In Ecuador, the bivalves of genus *Spondylus*, mainly *S. crassisquama* and *S. leucacanthus*, are very seriously threatened by overfishing. This research has implemented experimental protocols for spawning induction and early larval development of *S. crassisquama* under controlled conditions. This laboratory study has been led at the experimental unit from the Academic practices, Production and Biological Research Centre (CIBPA) at the Santa Elena Peninsula State University (UPSE), located in Mar Bravo beach, Santa Elena Province, Ecuador. A total of 4 individuals of *S. crassisquama* broodstock (weight,  $729,8 \pm 113,4$  g; length,  $138,9 \pm 11,9$  mm; height,  $105,6 \pm 5,8$  mm) were collected from Ayangué beach and acclimated in 300 L plastic tanks with treated seawater. Briefly, the experimental protocol for spawning induction was based on heat shock (20°C for 1 h and 30°C for 1 h) on broodstock at least three consecutive times by two days. After spawning, collected sexual material was released for external fertilization process. As main results, first and second cellular division were reported at 1,6 h post-fertilization; later cellular divisions, including trochophore stage, appeared in the next 9 h post-fertilization, while type D (veliger) stage was described at 22 h post-fertilization. Umboned larvae were reported at day 10 post-fertilization. Early larval population displayed less of 2% survival at day 10 post-fertilization. This work describes for the first time the spawning induction and early larval development of *S. crassisquama* in captivity. These results will encourage the larval culture of *S. crassisquama* for future restocking processes of natural populations.



### Biography:

Prof. José Antonio Melena Cevallos, has a degree in Aquaculture (ESPOL) and a Ph.D. in Evolutionary Biology and Ecology (University of Montpellier II, France). He has been working for 24 years in scientific research in Marine Sciences, initially at the National Center for Aquaculture and Marine Research (CENAIM-ESPOL) and at UPSE, as senior researcher and professor. He has led more than a dozen scientific and technological projects, particularly in Aquatic Pathology, Molecular Biology and Aquaculture focused on diversification (marine molluscs species). It has 30 scientific articles published in indexed and non-indexed journals, in addition to technical books as co-author.

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