

EARLY LARVAL DEVELOPMENT OF THE NORTHERN BRAZILIAN *DONAX STRIATUS* (BIVALVIA, DONACIDAE)

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SUMMARY

The present project is focused on the description of the larval development of *Donax striatus*. This surf clam possess as most marine benthic invertebrates planktonic larvae in their early life-stage and is commonly the main primary consumers in soft bottom communities, contributing up to 95 % of the total biomass. Despite the species key role in soft-bottom communities and its importance for the recreational fishery, early larval stages of *D. striatus* remains still unknown.

Keywords: Veliger larvae, surf clam, Brazil

INTRODUCTION

A common feature of many nearshore marine species is the presence of a planktonic larval and benthic adult life stage. As member of two distinct habitats, *Donax striatus* Linnaeus, 1767 may be subject to environmental events which operate independently of each other. Since the distribution, abundance, and persistence of these species may be highly dependent upon the interrelationship between the different life stages, benthic-plankton interactions play an important role in their population dynamics and ultimately in the structure and function of marine communities. However, shortly is known about the importance of *D. striatus* larvae in benthic-pelagic coupling processes (MATOS *et al.* 1995). The present study bridges this gap by the description of the early life history of *D. striatus* larvae.

MATERIALS AND METHODS

In order to describe the ontogeny of *D. striatus* adult specimens are collected by hand from the beach “Praia do Futuro” (Fortaleza, province Ceará, Brazil). In avoidance of stress, bivalves are transported immediately to the laboratory and acclimatized in a temperature chamber for at least two week, reflecting ambient levels in the natural habitat. Specimens are kept in a tank of 200 L, containing sterilized sand and filtered (1 µm) and aerated sea water, treated with ultraviolet light. The water is exchanged (20 %) weekly to prevent contamination by waste excreted; dead animals will be removed daily. Experimental specimens are exposed to a 12 hour day/night cycle and fed *ad libitum* with a mixture of *Chaetoceros calcitrans* and *Isochrysis galbana* (1:1) microalgae alive (HERRMANN *et al.* 2009). The maturation of specimen's gonads is monitored weekly by dissecting five individuals taken at random from the maintenance tank. Gonad ripeness is monitored by observations of gonad smear preparations; small portions of tissue excised microscopically are observed on an object slide. Study objects are induced to release gametes by an increase of 5°C in water temperature until gamete release stopped. Released oocytes and sperms are extracted carefully from extended siphons using a Pasteur pipette, and stored in separate glass beakers. The number of produced oocytes and sperm cells are estimated microscopically using a Neubauer chamber. Thereafter, germ cells are mixed under sterile conditions in a ratio of 1:10 (oocyte to sperm). During the early larval stage documentation *D. striatus* larvae are feed with multi-specific diet of microalgae, in order to increase the survival rate of larvae (RUIZ-AZCONA *et al.* 1996; HELM *et al.* 2004). Embryonic stages are observed hourly by means of light and electron microscopy.

PRELIMINARY RESULTS

By the deadline of the abstract submission the present project, which is part of the authors graduation, is not yet completed. Therefore, results of the early larval development of the northern Brazilian *D. striatus* will be available on the COLACMAR conference and presented at the author's panel.

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