

Problems in Larval Culture of Razor Clam (*Solen regularis*)

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Abstract

Solen regularis is locally known as 'Ambal' in Sarawak, Malaysia that inhabits the intertidal mudflats of Kuching and Samarahan. It can be a potential candidate for future aquaculture due to high consumers demand, commercial values and being collected totally from its natural habitat. Thus, it is crucial to study the larval development and culture of *S. regularis* in order to evaluate the potential of razor clam seed production. In the laboratory, induced spawning and larval culture had been carried out from April to August 2015 and March to August 2016. However, larval culture did not result in any formation of D-shaped larvae. Embryonic development stops at trochophore stage. Several problems faced during larval culture were water temperature effect on cell development, polyspermy and presence of endoparasite namely, trematode, copepods and ciliates. Since *S. regularis* has an annual reproductive cycle, the effectiveness of induced spawning is limited only to several months in a year. Therefore, broodstock conditioning is recommended in order to improve the quality of broodstock and to control the maturation of gametes.

Keywords: Induce spawning, larval culture, *Solen regularis*, Sarawak

Introduction

Razor clam, *Solen regularis* is locally known as 'Ambal' in Sarawak. This dioecious bivalve lives buried in the sediment at intertidal area of Kuching and Samarahan Division. *S. regularis* is the most common species collected in western part of Sarawak (Rinyod and Rahim, 2011). The early larval development of razor clam is almost similar to other species of bivalve (Flanagan, 2013). General embryonic development stage and larval development for razor clams can be summarised as reported by da Costa and Martinez-Patino (2009): (i) mass external fertilisation occurred in water column (ii) then, the fertilised egg passed through blastula, gastrula stages and developed into ciliated motile trochophore within 24 to 36 hours after fertilisation. Normally, development of velum and feeding of larvae started at 48 hours post fertilisation (da Costa *et al.*, 2011). Larval phase consist of several planktonic stages such as trochophore, D-shaped larvae and umbonate larvae (da Costa and Martinez-Patino, 2009). They remained in planktonic stages for few weeks depending on species. The settlement phase begins when the swimming veligers started to metamorphose, seek for substrates,