



Research Highlight

Impact of Temperature on the Development of Mud Spiny Lobster (*Panulirus polyphagus*)

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Spiny lobsters that are scientifically known as *Panulirus polyphagus* have an economic value and consumed as food. It belongs to the family Palinuridae and it is widely distributed. Spiny lobsters are a great source of protein and found in many countries like East Africa to Thailand, Taiwan, the Philippines and Indonesia¹.

Most fisheries are fully exploited or over exploited therefore; production can be enlarged through aquaculture. In the commercial culture of spiny lobsters, the most obstacles are difficulty in growing species throughout all their larval stages².

Different species of spiny lobster require different temperature stages³. Accordingly, the reproductive cycle of crustacean species can be controlled by temperature as well as photoperiod since those are significant environmental factors that improve the growth of organisms⁴.

Little information regarding fishery management is considered as one of the major constraints in understanding of fisheries management and development of mud spiny lobsters (*Panulirus polyphagus*). Because of amplified demand of this species in the market at present, sufficient data on

the distribution and reproduction is required to fulfill the needs of *P. polyphagus*.

Therefore, a new study was conducted in order to investigate the impacts of temperature on the ovarian development of *P. polyphagus* which is described based on the external and histological properties of the ovary and to evaluate the different temperature regimes (15, 25 and 35°C) on the embryonic development as well as on egg incubation period of this species⁵.

This study exhibited that there is no significant difference in all treatments with respect to gonadosomatic index as well as oocyte stage Index. However, there was a significant difference at oocyte diameters for all treatments.

In a nutshell, it was noted during the experiment that ambient conditions are appropriate for stimulating the ovarian development as *P. polyphagus* could definitely adapt to the natural environment in comparison to extreme conditions and culturing the berried female in low temperature could cause mortality to the lobster and trigger the berried female to release the eggs unhatched because of stress.

Key words:

Spiny lobsters, *Panulirus polyphagus*, photoperiod, environmental factors, oocyte diameters, gonadosomatic index, oocyte stage Index, ovarian development

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