INFLUENCE OF LUNAR CYCLE AND TIDAL FLUCTUATION ON GONADAL MATURITY OF GREEN MUSSEL (*Perna viridis*) IN INNER MALAMPAYA SOUND, TAYTAY, PALAWAN

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ABSTRACT

This study aims to identify the ideal period of harvesting cultured green mussel (*Perna viridis*) in order to attain larger flesh to shell ratio in inner Malampaya Sound, Taytay, Palawan by investigating the gonadal maturity in relationship to lunar cycle, tides, physicochemical and water productivity parameters. Twenty green mussel samples undergo histological analysis of gonad and 50 samples were measured for body indices weekly from October 2017 to March 2018. Results showed that the body and gonad indices have significant positive correlation with slight higher values during the first quarter weeks, and during a day before the low low tides. The peak of spawning was recorded during October. After which, partial spawning was observed and starts during the weeks of full moon until new moon with a duration of 1-3 week. Thus, the gonadal development/maturity of green mussel in the study is influenced by lunar cycle and tidal fluctuations. Among the water parameters monitored, salinity, pH, and temperature have a significant difference in the monthly, and lunar weeks levels. Furthermore, the drop in salinity might trigger the peak spawning. Diatoms (91%) dominate the plankton composition in the sampling area followed by small percentage of dinoflagellates (4%), zooplankton (2%), and cyanobacteria (2%) and ciliates (1%). The genus *Coscinodiscus* has the highest percentage (97.73%) among the diatom genera, this species could be one of the major algal diet of green mussels in the area. On the other hand, there was no significant correlation between the gonad index and body indices to the physicochemical parameters and water productivity parameters. Based on body indices and gonad index values, the ideal period to harvest green mussel is during the first quarter weeks. One out of 540 samples was found to be hermaphrodite.

Keywords: *Perna viridis,* gonadal maturity, body indices, lunar cycle, tidal fluctuations.