

Relationship between the carapace width and body weight increments and the confirmation of Stage 1 ovary after molting of the immature orange mud crab, *Scylla olivacea*, (Herbst, 1796) in captivity

ABSTRACT

This study describes the relationships between the carapace width (CW) and body weight (BW) increments and the confirmation of Stage 1 ovary after the molting of immature orange mud crabs, *Scylla olivacea*, in captivity. Morphological coloration and histological assessments were done on 165 immature female *S. olivacea*. Healthy crabs were sampled from the Setiu Wetlands in the coastal waters of Terengganu on the Malaysian Peninsula from July to September 2015. Thirty crabs were sacrificed for a preliminary study as a standard (control) in which the gonads (if available) were dissected for histological study. The remaining crabs (n=135) were selected for subsequent analysis (limb autotomy). Compared to the controls, the molted crabs generally did not produce any difference in the stage of the ovaries (remaining in Stage 1) but were observed to have larger oocytes. This demonstrated that the limb autotomy technique may activate hormone regulation, thus triggering vitellogenesis in the mud crab. There were also positive correlations between CW and BW ($P=0.001$, $P<0.01$) and significant differences through regression analysis ($P=0.002$, $P<0.01$) with the equation $y = 2.61x + 6.27$ ($R^2=0.069$). These results can be useful for developing baseline data for further crab management in Malaysia.