INFLUENCE OF PHOTOPERIOD ON THE HATCHING AND THE SURVIVAL RATE OF BLUE SWIMMER CRAB (*Portunus pelagicus*) IN CONTROLLED CONDITION

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ABSTRACT

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The blue swimmer crab *Portunuspelagicus*, is a commercially important species of tropical Indo- Pacific regions with high potential for aquaculture. Experimental study on optimization on incubation and larval rearing conditions in relation to photoperiod is essential further establish and stabilize the hatchery culture technology of this species to determine the influence of photoperiod on 12 D:12 L (12 hours dark: 12 hours lighted) and 24 D: 0 L (24 hours without light/covered) with three replicates. Broodstock incubation until hatching of the eggs and replicated six times in rearing of the zoea I to III were done. Newly hatched larvae of *P. pelagicus* in first zoeal stage (ZI) were also reared under the same two period conditions. Everyday larvae of each treatment were fed of rotifer and chlorella algae and the survival was monitored and recorded. Results showed that incubation period of the berried broodstock until hatching of eggs range from 8-10 days while the development of zoea III from zoea I, was 8-9 days. Significantly high hatching rate ($p<0.05$) was observed in photoperiod condition of 12 D: 12 L than the photoperiod condition using 24 D: 0 L. Recorded hatching rate was 73.09±6.51 and 41.85±10.94 12 D: 12 L and 24 D: 0 L, respectively. Significantly higher survival of zoea I to III ($p<0.05$) was observed in 12 D: 12 L compared to 24 D: 0 L with a percentage value of 34.75±3.39 and 18.42±5.09, respectively. Hence, photoperiod condition can significantly affect the hatching of eggs and survival of *Portunus pelagicus* zoeal larvae. Photoperiod condition of 12 D: 12 L appeared to be more suitable condition for hatching of *P. pelagicuss*eggs and rearing of zoea.