ABSTRACT

Rachmat Nur Aldin. 24020121120022. **The Effect of Molting Induction through Walking Leg Autotomy on the Growth of Mud Crab (Scylla serrata, Forskal 1775) in Apartment Shelters Integrated with a Recirculating System.** Supervised by Sapto Purnomo Putro and Jafron Wasiq Hidayat.

Mud crab (*Scylla serrata*) is one of the aquaculture commodities with high economic value. Optimization of mud crab cultivation through apartment shelters integrated with a recirculation system and the implementation of walking leg autotomy can be a strategic approach to stimulate growth and productivity. This study aims to evaluate the effect of walking leg autotomy on molting percentage, growth, growth pattern, and survivability of mud crab. The study used a Completely Randomized Design (CRD) consisting of control and autotomy groups, with 5 replications each for molting and growth and 10 replications for survivability over 8 weeks. Molting percentage and survivability data were presented descriptively, while growth, growth pattern were analyzed using Mann-Whitney ($\alpha = 0.05$), Robust regression (Huber M-estimator) with 95% Bootstrap. The results showed that walking leg autotomy accelerated molting, with the molting percentage reaching 100% while the control did not experience molting. This molting activity was followed by a significant increase ($p < 0.05$) in carapace dimension growth and body weight after week 6, and the specific growth rate increased from week 2. The growth pattern of both treatment groups was negative allometric ($b = 2.012$ control; $b = 2.1$ autotomy). As for survivability, the control (70%) was slightly higher than autotomy (50%). These findings represent that walking leg autotomy has been proven to effectively induce molting and increase growth. The decrease in survivability and the tendency toward a lean condition indicate the need to optimize nutritional strategies and post-molting management to minimize stress and reduce mortality rates in mud crab cultivation.

Keywords: *Scylla serrata*; autotomy; growth; apartment shelters.