

**TOTAL WEIGHT, TOTAL LENGTH AND MEAT
RECOVERY PERCENTAGE RELATIONSHIP OF
BLACK TIGER SHRIMP (*Penaeus monodon*) IN
EXPORT ORIENTED HEADLESS PRAWN
PROCESSING**

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ABSTRACT

Percentage recovery is a critical factor which has a strong relationship in determining the production yield and ultimately the profits in headless prawn processing industry. This study investigated the relationships of total weight and total length of black tiger prawn (*Penaeus monodon*) with the meat recovery percentage in headless prawn processing since it can assist in selecting and purchasing more suitable farm grown prawn lots into headless prawn processing factories for the profit maximization. Farm grown *P. monodon* (n=400) were randomly collected from the receiving section of a prawn processing factory in North West Province of Sri Lanka. The collected sample represented four average weight groups as 19.7 ± 7.8 g, 22.4 ± 8.1 g, 26.3 ± 7.8 g & 29.9 ± 8.2 g and each group consisted with 100 individuals. These four average weight groups were considered in this study since they are the frequently recorded weight categories in receiving raw prawns from farms into export oriented headless prawn processing industry in Sri Lanka. Total length, total weight, carapace weight and abdomen weight were measured in all the sampled prawns and the recovery percentage of each individual was calculated. Complete Randomized Design (CRD) model was performed to identify the significant differences of mean recovery percentages of the above average weight groups and the results showed that all the four mean recovery percentages were significantly different. As results indicated by the multiple comparison analysis, the mean recovery percentages of the average weight groups' 26.3 ± 7.8 g and 19.7 ± 7.8 g are significantly different, whereas 22.4 ± 8.1 g and 29.9 ± 8.2 g had similar mean recovery percentages ($P < 0.05$). The average weight group 26.3 ± 7.8 g yielded the highest mean recovery percentage as 62.46%. The prawns above the total length of 11 cm generate more than 60% of meat recovery in headless prawn processing as resulted by the regression analysis, which analyzed the relationship between the total length and the mean recovery percentage of *P. monodon*. In conclusion, the farm grown *P. monodon* prawn lots with average weight close to the 26 g can be recommended in obtaining higher recovery percentages for the export oriented headless prawn processing industry.

Keywords: Black tiger prawn (*Penaeus monodon*), Headless prawn processing, Meat recovery percentage, Total length, Total weight