

Morphometric Variation Analysis of Black Tiger Shrimp (*Penaeus monodon*) Brood Stock Collected from Two Sites in Sri Lanka

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Penaeid shrimps consist of approximately 110 species of which about 10 species are important for commercial culture. In Sri Lanka, *Penaeus monodon* species are found naturally in the coastal areas around the country and, matured wild caught shrimps are used as the brood stock in shrimp aquaculture industry. Morphometric differences among stocks of a species are recognized as important tool in evaluating the population structure. This study investigated the variation of morphological characters among *P. monodon* stocks collected from two different geographical areas of Sri Lanka; east coast (Batticaloa, n=58) and west coast (Chilaw, n=52). Truss network analysis of twelve measurements were standardized with equation $LTs_{(i)} = \log_{10} LT_{(i)}[\log_{10} TL_m / \log_{10} TL_{(i)}]$. Principal component analysis (PCA) was performed to test morphological variations within stocks. Wilks' Lambda test revealed that there are significant difference in all morphometric variables between east and west coasts (Wilk's $\lambda = 0.11233$, $F(12, 95) = 62.562$ and $p < 0.05$). Two principal components derived from PCA analysis accounted a total of 65% variance in truss measurement data. The plot against first (PC1) and second principal components (PC2) scores showed heterogeneous stock structure in east and west coast of Sri Lanka. Present finding is important for the brood stock development programs and uplift knowledge of phenotype of the *P. monodon* species. Studies on population genetics studies are recommended to confirm the results of the present study.

Keywords: Morphological characters, *Penaeus monodon*, Stock structure, Truss network