

Comparison of Blue Swimming Crab, *Portunus pelagicus* (Linnaeus, 1758) populations from Batticaloa and Trincomalee areas in Sri Lanka using Morphometric Parameters

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Western, Northern and Eastern areas of Sri Lanka are famous for blue swimming crab fishery. However, very limited studies have been carried out to identify their population structure. This study investigated the utility of morphological characters to differentiate *Portunus pelagicus* populations of two different areas in eastern province of Sri Lanka. Samples were collected from Batticaloa (n=46) and Trincomalee (n=46) waters throughout its known geographic range. Twelve morphometric characteristics were measured up to nearest 0.01 mm. Discriminant Function Analysis (DFA) was performed to analyze significant intra-specific variations of two populations using standardized morphometric characteristics. The derived single discriminant function was totally accounted for 100% variance (Wilks' Lambda=0.74, $P < 0.05$). The carapace width to carapace length ratio (CW2/CL) was recorded the highest canonical discriminant function coefficient (0.89), thus CW2/CL was selected as the most suitable parameter for the predicted model. The two centroids derived by DFA were 0.59 and (-0.59) respectively for the Trincomalee and Batticaloa, and predict the separation of two groups. According to the plotted graph, minimal overlapping between two groups was observed with possible variation between two populations. Two different allometric coefficients (b) were recorded as 2.92 (closer to isometric growth) and 2.76 (negative allometric growth) for Trincomalee and Batticaloa populations respectively. Hence, the results suggest that there is a possibility of having two *P. pelagicus* stocks in the 2 sites of the eastern part of the island. Changes of prevailing environmental conditions and habitat are the factors that lead to morphological differences of two *P. pelagicus* populations. Finding of this study is important for implementations of site-specific sustainable fishery management programs. Further, population genetic studies are recommended to confirm the results of the present study.

Keywords: Crabs, *Portunus pelagicus*, Morphometric Characteristics, Population differentiation, Fisheries Management, Discriminant Function Analysis