

**GENETIC DIFFERENTIATION OF TWO COMMERCIALY IMPORTANT CRAB SPECIES IN THE GENUS *SCYLLA* USING BARCODING GENE REGION AND ITS IMPLICATIONS IN AQUACULTURE INDUSTRY**

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Two mud crab species *Scylla serrata* and *S. olivacea* are sympatric in nature and are phenotypically similar species which make confusion when identifying. This study investigated a genetic approach for differentiation of above two crab species using information collected from partially amplified Cytochrome Oxidase I (COI) gene region of mitochondrial genome which is also known as DNA barcoding gene region. Samples were collected from southern coastal region of Sri Lanka and two different morphs and their sexes were selected for genetic analyses. Approximately 620 bp gene region was sequenced and their phylogenetic status was estimated using the available data (for COI gene region) in the Genbank that were recorded for the above two species in Indian Ocean.

A single haplotype was resulted for *S. serrata* from the southern coast of Sri Lanka and it was identical with the sequences available in the Genbank. Two haplotypes were derived for *S. olivacea* which differ with each other by 0.8% nucleotide distance (P distance) and grouped with relevant sequences in the Genbank forming two clades in the phylogenetic tree. Estimated nucleotide distance (P distance) between two species ranged from 13.1% to 13.2%. The availability of recognition sites on resulted sequences of two species for different restriction enzymes was identified. It can be suggested that those enzymes could be utilized as an inexpensive method to differentiate the two species. The information produced from this study could be utilized in identification and selection process in the crab fattening and culturing industry in Sri Lanka.