

## **Genetic diversity of tiger prawn (*Penaeus monodon*) populations in Sri Lanka: implications for aquaculture and conservation programmes**

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The estimation of intra-specific level of diversity of any species is a fundamental for management of natural and cultured populations. Genetic markers have been used for several applications in *P. monodon*, for instance, in the investigation of genetic variability of wild stocks, maintaining genetic characteristics of artificially propagated stocks, genetic improvement of *P. monodon* domesticated stocks through selective breeding programmes. The first population genetic study on *P. monodon* in Sri Lanka was carried out using 588 bp sequence fragment of mitochondrial control gene region. Three populations were selected from Southern (20), Western (22) and Eastern (21) parts of Sri Lanka. High haplotype number was recorded in Western (11) and Eastern (12) populations while low haplotype number (03) was reported from the Southern population. Only one haplotype was common among Southern and Eastern populations and all others were specific to each population. When Sri Lankan haplotypes were compared with other published *P. monodon* sequences for the relevant gene region, results indicated that Sri Lankan haplotypes are closely related with the Western pacific ocean populations (Thailand, Taiwan, Vietnam etc.) than Western Indian ocean populations (Madagascar, Mauritius, Tanzania etc.). This may be due to the pattern of oceanic currents which contribute to the distribution of the pelagic larval stage of *P. monodon*. However, one haplotype is highly abundant in Southern population which indicates low genetic variation. Occurrence of such types of low genetic variation could be possible due to high exploitation of the available natural population or the population being isolated due to a geographical barrier available in the coastal region. This information could be utilized when selecting brood stocks for *P. monodon* culturing programmes and implementation of management strategies for conservation of wild populations in Sri Lanka.

**Keywords:** *Penaeus monodon*, Sri Lanka, mitochondrial control gene region, genetic diversity, haplotype

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