

Genetic diversity of mud crabs, *Scylla tranquebarica* in Sabah, Malaysia based on Cytochrome C Oxidase (COI) gene sequence

Abstract

Mud crabs genus *Scylla* are distributed across the Indo-West Pacific Oceans. Among the four species, *S. tranquebarica* dominates the mangrove areas in Sabah, Malaysia and constitutes the primary crustacean fishery resource. Overexploitation of this economically important fisheries resource can have a significant impact on population diversity. This study was conducted to evaluate the genetic diversity of *S. tranquebarica* from five important fishing grounds. The genetic diversity was estimated based on the cytochrome c oxidase (COI) gene sequence. A total of 143 individuals were sampled across the 5 fishing grounds. The findings revealed that the crabs in Sabah comprised 11 haplotypes with a mean haplotype diversity (h) of 0.5564 and a mean nucleotide diversity (π) of 0.0038. The molecular variance analysis (AMOVA) showed that the low genetic differentiation among crab individuals in the five fishing grounds. The low genetic diversity provides the basis for the establishment of a scientific breeding program to counteract the loss of genetic diversity which is the result of over-exploitation of this ecologically and economically important fisheries resource.