

## **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 ( $\pi$ ) 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 overexploitation of this ecologically and economically important fisheries resource.