GENETIC IDENTIFICATION OF SELECTED ORNAMENTAL FISHES IN SEREMBAN, NEGERI SEMBILAN

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ABSTRACT

GENETIC IDENTIFICATION OF SELECTED ORNAMENTAL FISHES IN SEREMBAN, NEGERI SEMBILAN

The ornamental fish sector is a widespread and global component of international trade, fisheries, aquaculture and development. The utilization of multiple trade names causes problem in species identification. Moreover, unmanaged trading could lead to severe threats to biodiversity. In this regard, DNA barcoding could effectively clarify the divergence of the species. Considering the utility of DNA barcoding as a comprehensive system for species identification and discovery, this study aims to investigate the genetic relationship and to construct the phylogenetic tree among those selected fish species collected from selected pet stores in Seremban, Negeri Sembilan. The 642bp barcode fragment of the Cytochrome *c* oxidase I (*COI*) gene was PCR amplified. Results from BLAST showed all the generated sequence were subjected to high percentage identity index and similarity between 99% to 100%. It was then analyzed using MEGA 7.0 through Neighbour-Joining (NJ) clustering and K2P distance based approach. The analysis revealed straightforward identification of eight specimens into five species with increasing value of genetic distances from conspecific (0.05%) to the taxonomic level (20.18%). The phylogenetic analysis consists of own sequences and reference sequences obtained from the GenBank. All the specimens from different genus was found with high bootstrap value (n>90%) through Neighbour-Joining (NJ) and Maximum Likelihood method. Thus, DNA barcoding reflects the efficacy of the techniques in identifying the genetic assessment in selected ornamental fishes.