

Abstract

Thesis Title : Morphological Characters and Genetic Diversity of Nieuhof's Walking Catfish (*Clarias nieuhofii*) in Some Locations of Southern Thailand using Amplified Fragment Length Polymorphism (AFLP) Technique

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Clarias nieuhofii has been recently classified as vulnerable to extinction. Morphological characters of *Clarias nieuhofii* from Suratthani (SR), Phatthalung (PT) and Narathiwat (NR) provinces were investigated using principal components analysis (PCA). The PCA plot based on 24 morphological characters clearly showed high relationship between Phatthalung and Narathiwat populations. Moreover, genetic diversity was studied using five primer combination of amplified fragment length polymorphism (AFLP) markers. From the results, 120 bands ranging in size from 100 to 600 base pairs were found. The percentage of polymorphism (%P), gene diversity (H_T) and shannon's information index (I) of diversity across the overall samples were 99.17%, 0.4009 ± 0.0122 and 0.5835 ± 0.1322 respectively. These results showed that genetic diversity of *Clarias nieuhofii* was high in all three populations. The population from Phatthalung showed the highest percentage of polymorphism (97.48%), Shannon's Information Index (0.5732 ± 0.1533) and gene diversity (0.3939 ± 0.1233). The coefficient of genetic differentiation was 0.1526 and the mean genetic distance among populations across all primers was 0.1203 – 0.2017. The UPGMA dendrogram indicated that the Phatthalung population closely related to the Narathiwat population. This information would be useful for genetic improvement and sustainable management of *Clarias nieuhofii*.