



Genetic diversity and genetic structure of consecutive breeding generations of golden mandarin fish (*Siniperca scherzeri* Steindachner) using microsatellite markers

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ABSTRACT. In this study, 12 polymorphic microsatellites were investigated to determine the genetic diversity and structure of 5 consecutive selected populations of golden mandarin fish (*Siniperca scherzeri* Steindachner). The total numbers of alleles, average heterozyosity, and average polymorphism information content showed that the genetic diversity of these breeding populations was decreasing. Additionally, pairwise fixation index F_{ST} values among populations and D_a values increased from F1 generation to subsequent generations (F_{ST} values from 0.0221-0.1408; D_a values from 0.0608-0.1951). Analysis of molecular variance indicated that most genetic variations arise from individuals within populations (about 92.05%), while variation among populations accounted for only 7.95%. The allele frequency of the loci SC75-220

and SC101-222 bp changed regularly in the 5 breeding generations. Their frequencies were gradually increased and showed an enrichment trend, indicating that there may be genetic correlations between these 2 loci and breeding traits. Our study indicated that microsatellite markers are effective for assessing the genetic variability in the golden mandarin fish breeding program.

Key words: Aquaculture; Golden mandarin fish; Selective breeding; Microsatellite markers