



Characterization of microsatellite markers and their correlations with growth traits in Mandarin fish (*Siniperca chuatsi*)

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ABSTRACT. Mandarin fish (*Siniperca chuatsi*) is a traditionally cultured freshwater fish with high commercial value in China. To facilitate marker-assisted selection for genetic improvement of this species, 100 microsatellite markers identified in previous studies were characterized in the 25 largest and 25 smallest individuals. Twenty polymorphic loci were used to genotype 200 individuals, and the associations between their genotypes and growth traits were examined. We found that 9 genotypes at 8 loci (*SC-10*, *Sin 135*, *Sin 166*, *AP 34-23*, *AP 38-11*, *AP 37-22*, *AP 37-08*, and *AP 37-37*) were positively correlated with growth traits (body weight, body length, body height) in the mandarin fish population. The average of observed and expected heterozygosities were 0.71 and 0.59, respectively, and the average

polymorphism information content value was 0.54, indicating that the population had high genetic diversity. The markers developed in this study are useful for selection of genetic breeding in this species and its related species.

Key words: Association analysis; Genetic diversity; Growth traits; Mandarin fish; Microsatellite