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Microsatellite DNA markers and their correlation with growth traits in mandarin fish (*Siniperca chuatsi*)

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ABSTRACT. The mandarin fish (*Siniperca chuatsi*) is a traditionally cultured freshwater fish with high commercial value in China. To facilitate marker-assisted selection in genetic improvement of this species, 120 microsatellite markers from the literature were characterized in the 25 largest and 25 smallest individuals. Eighteen polymorphic loci were then used to genotype 200 individuals, and the associations between their genotypes and growth traits were examined. We found that eight genotypes of six loci (*AP 37-06*, *AP 37-11*, *AP 37-16*, *AP 37-48*, *AP 38-32,* and *AP 39-05*) were positively correlated with growth traits (body weight, length, and height) in the mandarin fish population. The average observed and expected heterozygosities were 0.68 and 0.59, respectively, and the average PIC value was 0.50, indicating a population with high genetic diversity. Therefore, these markers could be useful for assisted selection in genetic breeding of this species and its related species.

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

