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Genetic Stock Structure of *Scomberomorus guttatus* Using Microsatellite Markers in the Persian Gulf

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Abstract

In order to assess the genetic differentiation within and between wild populations of Indo-Pacific king mackerel (*Scomberomorus guttatus*) five microsatellite markers were used (J43Sc, L42Sc, D61Sc, H96Sc, C83Sc). Population structure and genetic divergence were investigated by 160 individuals from,Lengeh, Dayyer, Boushehr and Abadan in the northern coasts of Persian Gulf. All the markers produced polymorphic PCR products, which amplified of the four populations. Genetic differentiation, as measured by the fixation index, F_{st}, was determined to estimate stock structure. Results identified one genetic stock with sufficient gene flow between all the four regions to prevent regional genetic differentiation from occurring. Almost 97% of the genetic variation was observed within individuals, 2% among populations and 1% among regions ($P<0.001$). Results revealed that adopting a single-stock model and regional shared management could probably be appropriate for sustainable long-term use of this important resource.

Keywords: Scomberomorus guttatus; Microsatellite markers; Persian Gulf; Stock structure