

Abstract

The purpose of this study was to investigate the genetic structure and diversity of ornamental fish using microsatellite markers. Four species, including rosy, green, tiger and Albino ornamental fish breeding centers in different parts of Mashhad preparation and purification of the 40 subjects were randomly assigned to two generations (10 specimens of each species) were selected and the amount of 0.2 g DNA was extracted from the tissue of the dorsal fin. DNA was extracted from tissue kit company DENA Zist Asia was friendly. To study the genetic diversity between and within species of four microsatellite markers were used. Amplification of microsatellite sites within the polymerase chain reaction was performed with specific primers and detected four genotypic patterns of PCR products were analyzed on an 8% acrylamide gel. The number of alleles observed at four positions 21 and the total population, respectively, 5, 6, 5 and 5. The number of alleles at position sm17 species Barb and the lowest number of alleles at position Mal06 and in green Barb was kind. Heterozygosity at the sites studied in the range of was 0.16 – 0.3. Polymorphism information content of the four positions in four species in the four largest SM25 (0.42), Mal06 (0.37), SM17 (0.60) and MA109 (0.46), respectively. All positions except the position of the SM25 and Mal06 in place of Barb Albino and position sm17 population rozy barb of Hardy_Weinberg equilibrium were deviations. Phylogenetic analysis and AMOVA analysis based on data from four polymorphic loci showed that 3% and 97% of the variation in the diversity within the population, but the population of Green Barb other populations are high genetic similarity percentage.

Keywords: Genetic diversity, Ornamental fish, Microsatellite



University of Zabol
Faculty of Agriculture
Department of Animal Science

Title:

**Analysis of genetic diversity and structure of ornamental
fish by Microsatellite markers**

Supervisors:

Dr.G.R. Dashab

Advisors:

Dr. M. Vafaei valle

By:

S. i. fazel

December 2014