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**STUDY OF GENETIC DIVERSITY OF DASHTIARI AND KHAZAK BREEDS  
USING MICROSATELLITE MARKERS**

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Native chickens are at risk of extinction. Two such breeds are the Khazak, an egg type and Dashtiari, a meat type, of the Zabol region of Iran. The goal of the study was to estimate information about the genetic structure of these breeds for effective breeding and efficient preservation.

Genetic diversity within and between the two breeds (Dashtiari and Khazak) was investigated using ten microsatellite markers (MCW5, MCW16, MCW18, MCW34, MCW39, ADL225, ADL262, ADL185, ADL136, ADL210). A total of 30 feather samples were collected from each breed. Phenol-chloroform and Diatom DNA Extraction Kit methods were used to isolate the DNA from feather pulp. Standard measured of genetic distance and the UPGMA tree showed that Dashtiari and Khazak were in one group. Heterozygosity was calculated by Nei (1978)'s formula. The expected heterozygosity varied from 0.8881(ADL225) to 0.6919 (MCW5). The highest polymorphism information contents (PIC) were in ADL225 and ADL136 in the two breeds. The results of the heterozygosity study were consistent with PIC. The Hardy-Weinberg equilibrium (HWE) test showed that all loci deviated from HWE except MCW34 and ADL262 in Khazak and MCW16 in Dashtiari. The results of this study suggested that microsatellite DNA markers are useful tools for studying the genetic relationships between chicken breeds.

**Keywords:** genetic diversity, microsatellite marker, heterozygosity, Dashtiari, Khazak

**NEI, M.** (1978). Estimation of average heterozygosity and genetic distance from a small number of individuals. *Genetics* 89: 583-590.