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Abstract title:

A Genetic Study on Turkish Horse Breeds Based on Microsatellite and mtDNA Markers and Inferences for Conservation

Author: Denizci, M., Aslan, O., Koban, E., Aktoprakligil, D., Aksu, S., Balcioglu, K., Turgut, G., Erdag, B., Bagis, H., Arat, S.

Abstract text:

The increasing loss of animal genetic resources has become an important issue in the last decade and many countries has their own action plans following FAO's global management programme. Conservation studies and successful implementation of management plans first requires understanding the genetic composition of the populations. The studies on sheep, cattle and goat have shown that Anatolia is an important place in animal domestication process. Horses have served man in battle, at work, on the hunt, and in sports. They have been an important companion for the populations lived in Anatolia as they did in other parts of the world. There are studies on native Anatolian livestock animals based on DNA markers, but not on horses. This study analyses the present diversity within and between four native Anatolian horse breeds using 14 microsatellite loci and mtDNA diversity based on D-loop sequence. The preliminary results revealed relatively low allelic diversity with a mean of 6.68 alleles/locus/population and no detectable population structuring. The average observed heterozygosity is 0.75/locus/population and the average unbiased expected heterozygosity is 0.774/locus/population. mtDNA analysis of 271 individuals revealed 111 haplotypes partitioned in 12 groups not associated with the breeds' phenotypic characteristics as in the case observed in livestock species. The high motility of horses, horse trading habits, keeping all the horses of a village in one place over winter without any control on their breeding and lack of proper breeding strategy for horse in the country are reflected in the results.

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(Correspondance: Sezen.Arat@mam.gov.tr)