

GENETIC DIVERSITY IN TURKISH NATIVE SHEEP BREEDS BASED ON TWO INDEPENDENTLY COLLECTED DATA

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Turkey was found to be the cradle of the sheep domestication events. Therefore, Turkish native sheep breeds might be harboring invaluable gene diversity to be explored in the future. In order to manage genetic diversity of Turkish sheep, diversity patterns must be identified. In the present study, computerized statistical analyses of two previous studies were examined comparatively to have a better understanding about the genetic diversity patterns of Turkish native sheep breeds. In both of the previous studies microsatellite loci and mitochondrial DNA (mtDNA) control region (CR) restriction fragment length polymorphisms (RFLP) were the genetic markers used. In both of the studies, mtDNA RFLP diversity pattern, hence the maternal pattern, through PCA and Delaunay network analyses indicated the presence of strong vertical genetic barrier lying in the middle of Anatolia. This suggested presence of two evolutionary different groups to be managed. The same genetic barrier was observed based on microsatellites (reveal both maternal and paternal patterns) in the first study (by Neighbor-Net and Neighbor Joining Tree) but not in the second. In both of the previous studies Structure and AMOVA analyses indicated that our native breeds are mixed in parallel to the practice of frequent ram introduction from another flock irrespective of its breed.

These results are interpreted as follows:

- 1) Evolutionary histories of females and males are different from each other.
- 2) Pattern in females display the routes of migration/dispersion and suggests the presence of two evolutionary different groups to be managed.
- 3) Microsatellites hint the same pattern but it is less evident because of the high degree of mixture of breeds through the transportation of males.
- 4) Another reason of discrepancy between the results of two studies could be the sampling effect.

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