

PHYLOGENETIC RELATIONSHIPS BETWEEN ROMANIAN GREY STEPPE CATTLE AND PODOLIAN CATTLE BASED ON mtDNA SEQUENCES ANALYSIS

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Abstract

*The main purpose of this study was to analyze the phylogenetic relationships between the endangered Grey Steppe cattle and other podolian cattle breeds, including a common ancestor of the wild ox, *Bos taurus primigenius*. The biological material was represented by 32 blood samples collected from the Grey Steppe, from which DNA was extracted to analyze two mitochondrial markers (cytochrome b and d-loop), relevant for genetic diversity studies, phylogeny, and molecular phylogeography. After PCR amplification of the two molecular markers, sequencing was carried out using the Sanger technique, thus obtaining the nucleotide sequences on the basis of which the phylogenetic tree was built, showing the phylogenetic relationships between the studied breeds. The obtained results demonstrate the belonging of this breed to the *Bos taurus* genus and the close phylogenetic relationships with other podolian cattle. The PQT haplotype, the closest haplotype to the wild ancestor, was predominant among the analyzed individuals. These results are important for efforts to conserve the genetic resources of Grey Steppe cattle.*

Key words: genetic diversity, Grey Steppe, mtDNA, phylogeny, podolian