

GENETIC DIVERSITY AND PHYLOGENETIC RELATIONSHIPS OF ENDANGERED GREY STEPPE AND PINZGAU CATTLE BREEDS

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This study aims to augment the existing body of literature concerning the genetic diversity and phylogeny of the Romanian Grey Steppe and Pinzgau cattle.

Podolian cattle breeds, originating from the rugged and diverse landscapes of Eastern Europe, have long been recognized for their remarkable adaptability and historical significance in agriculture. This cattle group include breeds like the Ukrainian Gray, Moldavian, Hungarian Gray, and Romanian Grey, renowned for their ability to thrive in harsh environmental conditions. Originating in the Podolian region of Eastern Europe, these cattle have played pivotal roles in the agriculture sector.

Podolian cattle typically exhibit a robust build, medium to large size, and gray or grayish-white coats with distinctive darker pigmentation around the eyes, muzzle, ears, and hooves. They are known for their lyre-shaped, forward-curving horns, which add to their unique appearance.

The Romanian Grey Steppe cattle breed, classified also as one of Europe's most ancient native cattle breeds, falls under the *Bos taurus primigenius* and shares a common ancestry with various other podolian cattle breeds. This breed possesses distinctive biological attributes that have allowed it to thrive as a native breed throughout history, displaying increased adaptability to harsh climates and resistance to diseases, as well as remarkable hardiness and longevity.

The Pinzgau cattle breed presents major importance in the zootechnical sector, being adapted for growth and exploitation in areas with altitudes between 400-1600 m, rich in precipitation and fertile natural meadows, having resistance and capitalizing feed with a high cellulose content very well.

The results of this research show that these two breeds belong to the wild ancestor *Bos taurus primigenius*, an important aspect for genetic conservation programs. Revised citations from the literature pertaining to endangered cattle breeds in Romania, including the Grey Steppe and Pinzgau, corroborate the presence of a reservoir of valuable genes within these breeds.

The conservation of these genes necessitates the application of various reproductive biotechnologies. The outcomes of this research have the potential to enhance the conservation program for this breed, offering contemporary insights into genetic diversity-an invaluable tool for safeguarding endangered gene pools.

Keywords: *cattle, genetic conservation, Grey Steppe, Pinzgau.*