**PCR-RFLP Genotyping of Whole Romanian Grey Steppe Cattle Population for α_S1 Casein I^RV Allele**

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**SUMMARY**

The genetic polymorphisms of major milk proteins were studied relative to milk quality and its manufacturing properties (Delacroix-Buchet *et al.*, 1994) or as Zebu introgression markers in *Bos taurus* breeds (Ibeagha-Awemu *et al.*, 2007), either to study cattle phylogenetic relationships (Balteanu *et al.*, 2008). In our previous work we identified and confirmed the hypothesis of the existence of this new additional α_sl-CN genetic variant in Romanian Grey Steppe cattle (Balteanu *et al.*, 2008, GenBank accession number EU908730). In order to study the frequency of this new allele in this breed, blood samples were collected from the entire known existing population, consisting of 63 individuals of different ages: 57 from the S.C.D.C.B. Dancu, Iasi County, and 6 from the U.S.A.M.V. Cluj-Napoca, Cluj County. Six straws with conserved semen, belonging to the bulls used in the national conservation program of this breed, were also recovered from S.C.D.C.B. Dancu. The whole population genotyping, done based on the PCR-RFLP test developed in our previous work (Balteanu *et al.*, 2008), revealed that 4 deceased bulls and 13 living females of different ages carry this α_sl-CN I^RV new allele, making the calculated frequency of this allele 0.123. This frequency is relatively high for a new genetic variant. Of course some could attribute this to a low number of individuals left, which possibly caused inbreeding. This theory can be easily refuted by the fact that the conserved semen (from the 1980’s) belonging to 4 unrelated bulls carries this new variant. This suggests that I^RV variant had an even higher frequency at the time when this breed and its progenitors were the only ones existing in Romania. However, the declining number of individuals has also likely allowed this breed to remain relatively isolated from introgression of other alleles from other breeds.

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**REFERENCES**