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αS1- CASEIN ALLELES FREQUENCY IN CARPATHIAN GOAT

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SUMMARY

In goat milk, among the four caseins, the most polymorphic is αS1 casein.Twelve allele with four different expression levels have been identified so far:-strong allele: A, B, C, H, L, M producing 3.6g/L; intermediate allele: E with 1,6g/L; weak allele: D, F with 0.6g/L and null alleles: 0_1, 0_2, N with no casein in the milk of homozigous animals (Martin et al, 2002). The A allele has a significant positive effect on milk protein, casein, fat content and manufacturing properties, in comparison with E and F. Cheese yield was with up to 15 % higher in AA genotypes in comparison with FF and had a lower goat flavor (Mahé et al, 1993; Martin et al, 2002). In Romania the unimproved Carpathian goat has a high heterogeneity in milk quality (fat: 3.2-6.9% and protein: 2.5-5%), representing a high breeding potential. The present study goal was to investigate αS1 casein locus polymorphism, in order to establish the nature of protein ant fat content variation. To our knowledge milk proteins polymorphism in this breed has never been investigated so far. Genotyping was carried out on 55 milk samples by IEF, as reported before (Bâlteanu et al., 2007). Alleles frequencies found in αS1-casein locus were: p_A=0.390, q_B=0.245, r_E=0.163, m_F=0.154. Relatively high frequency of medium and high expression alleles can explain in part the variation in protein and fat content of goat milk. Due to the heterogeneity of each heard, further studies in Carpathian goat populations will be performed, to establish their influence in milk quality and its manufacturing properties and to use this genetic marker in breeding programs.

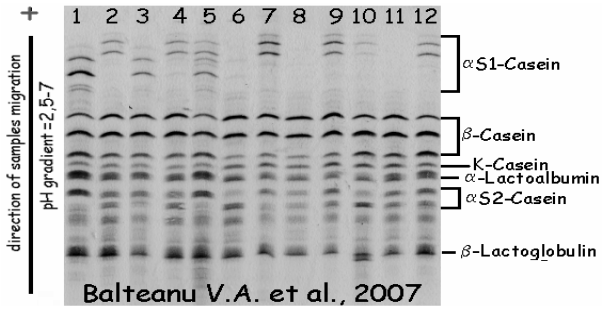

Figure 1. IEF profile belonging to some Carpathian goat individuals.
The genotypes at the αS1-casein locus were: 1- AA; 2- EE; 3-AF; 4- EE; 5-AB; 6-FF; 7- BB; 8- FF; 9-BB; 10-EF; 11-FF; 12-BE;

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