

DISTRIBUTION OF MILK PROTEIN ALFA_{S1}-KAPA CASEIN GENOTYPES COMBINATIONS AND THEIR LINK WITH PRODUCTIVITY IN LITHUANIAN DAIRY CATTLE BREEDS

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Summary. In the study, to characterize distribution of bovine milk proteins Alpha_{s1} - Kapa-casein genotypes combination was collected 427 (♀-394; ♂-33) unrelated animals from four Lithuanian dairy cattle breeds: LB&W-125, LR-181, LLG-70 and LWB-51. The identification of milk protein genotypes combination has been tested by methodology based on a polymerase chain reaction (PCR) and restriction fragment length polymorphism (RLFP).

In the Lithuanian dairy cattle breeds multiple locus model- 8 milk protein genotypes of Alpha_{s1}-Kapa casein were investigated. The most common BBAA and BBAB genotypes of milk protein Alfa_{s1}-Kapa casein was found in all four investigated cattle breeds.

Comparing productivity rate average, according of milk protein Alpha_{s1}-Kapa casein genotypes established, that BBBB genotype was associated with the higher fat (4,5±0,08%) and protein (3,5±0,04%) percentage in bovine milk. Meanwhile, statistically significant of Alfa_{s1}-Kapa casein genotype BBBE effected higher milk yield (5776±277kg), fat (251,4±14,4kg) and protein (187,9±938kg) amounts, compared with other genotypes.

Multifactor dispersion analysis (ANOVA) was calculated for effects of milk protein Alpha_{s1}-Kapa casein genotypes combination for milk yield and milk composition.

Milk protein Alpha_{s1}-Kapa casein genotypes combination showed higher influence for milk protein percentage 6,1% (P<0,001). After identification of quantitative (QTL) and qualitative trait locus in which existing genotypes determine manifestation of one or several quantitative traits. They can be used like genetics markers, which would let assess character of marks variability and consistent inheritance.

Keywords: milk, cattle, casein, polymerase chain reaction.