



INFLUENCE OF CSN3, LGB, PRL, GH, TG5 GENES ALLELES ON DAIRY PRODUCTIVITY AND ENERGY VALUE OF COW'S MILK

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ABSTRACT

The aim of our research was to study the dependence of Kholmogorsk breed dairy cows' productivity on polymorphism of kappa-casein (CSN3), beta-lactoglobulin (LGB), prolactin (PRL), somatotropin (GH), thyroglobulin (TG5) genes. It was found that B allele (BB genotype) of PRL gene caused maximum increase in milk production (19.7%). Maximum increase in milk productivity (15.0%, $P < 0.001$), was found at L allele (LL genotype) of GH gene. Significant increases in the presence of A and B alleles with AA (14.3%) and BB (12.7%) genotypes of CSN3 and LGB genes were detected. The maximum increase in fat mass fraction (0.22%) in milk was found at ABL homozygous genotype of PRL gene, while significant increase of fat content was detected at C allele (CC genotype) of TG5 gene (0.15%, $P < 0.05$). The maximum increase of protein mass fraction at B allele (BB genotype) of PRL gene (0.11%) was detected. The maximum increase in milk protein was found at B and L alleles (BB and LL genotypes) of LGB and GH genes (0.06% with $P < 0.01$ and $P < 0.001$, respectively). Analysis of milk energy value showed that A and B alleles and AA (2.80 MJ / kg) and BB (2.80 MJ / kg) genotypes of CSN3 gene and BB genotype of LGB (2, 82 MJ / kg) and PRL genes (2.93 MJ / kg), as well as the T allele and TT genotype for the TG5 gene (3.17 MJ / kg) are associated with this indicator.
