GROWTH HORMONE GENE POLYMORPHISM AND ITS INFLUENCE ON MILK TRAITS IN CATTLE BRED IN LITHUANIA

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Abstract. The aim of the present study is to investigate the polymorphism of growth hormone gene in cattle grown in Lithuania and its influence on farming characteristics. In the investigated group of 291 cattle belonging to 10 breeds the growth hormone gene allele A was found with the frequency of 0.751 and allele B with the frequency of 0.249. Allele A was found with the maximum frequency (0.900) in Hereford breed and allele B (0.438) in Simmental breed. The growth hormone allele frequencies between dairy and beef cattle breeds did not differ. Growth hormone gene genotype AA was found in 62.9% of the cattle, heterozygous AB genotype in 24.4% and BB genotype in 12.7%. Genotype AA, with the highest frequency of 90% was found in Hereford cattle, genotype AB in 55.6% of Lithuanian Black and White and genotype BB in 37.5% of the old Lithuanian Black and White breed. Through investigation of the effects of genetic factors on the indicators of bovine milk yield and composition, the largest statistically significant impact of the growth hormone gene to the average percentage of fat content and milk yield was determined. It affected around 2% of the diversity of these indicators. Allele A of the growth hormone increases milk fat percentage, and allele B increases milk volume during lactation.

Keywords: growth hormone (GH), restriction fragments length polymorphism (RFLP), cattle.