

Polymorphisms of milk protein genes and their influence on milk performance traits of cows

S u m m a r y

The aim of the study was to determine frequencies of beta-lactoglobulin and kappa-casein genes and genotypes and their influence on milk yield and its basic components of Holstein-Friesian Black-and-White primiparous cows maintained in three herds in the Kujavian-Pomeranian voivodeship. Genotyping of BLG and CASK genes was performed with the use of PCR-RFLP technique with restriction enzymes *HaeIII* and *HinfI*, respectively. The numerical data were statistically worked out with the use of multi-factor analysis of variance using GLM procedure in SAS statistic package. The results of the analysis indicated that BLG AB heterozygotes (0.49) were over twice as frequent as compared to BLG AA (0.24) and BLG BB (0.27) homozygotes. The highest milk yield and its basic components were noted in the group of BLG heterozygous cows. In case of CASK gene higher frequency of A allele (0.82) than B (0.18) allele, which is desired in breeding, was noted in the investigated population. The numbers of genotype groups were similar for whole population as well as for certain herds. In case of kappa-casein gene it was stated that AA BLG cows gave more milk and its components than cows of other genotype groups. However, the differences were not statistically significant.