

Impact of LEP and LEPR gene polymorphisms on functional traits in Polish Holstein-Friesian cattle

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Abstract :

Five single nucleotide polymorphisms in leptin and leptin receptor genes were analysed for their possible impact on estimating breeding values for somatic cell count score (SCS) in milk, longevity and reproductive traits. Used were 309 active Polish Holstein-Friesian bulls. The LEP-C(-963)T, LEP-Y7F, LEP-R25C, LEP-A80V, and LEPR-T945M genotypes were identified using the PCR-RFLP method. For linked leptin mutations, the additional haplotype analysis was performed. The results obtained suggest that three polymorphisms of bovine LEP gene may be associated with nonreturn rate in cows. The most significant effect was found for LEP-A80V. Moreover, the LEPR-T945M mutation seemed to be related to the age at first insemination.

Key Word :

cattle, functional traits, LEP, LEPR, polymorphism, reproduction

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