The Genetic Polymorphisms in Leptin Gene Locus (Obesity Gene) in Romanian Farm Species and Their Evaluation as Genetic Markers in Breeding and Traceability

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Keywords: leptin, polymorphism, markers, cattle

SUMMARY

Leptin is a key hormone which modulates the neuroendocrine control fat reserves in organism, appetite, body weight and energy balance (Leifers et al. 2002). The leptin gene (obesity gene) polymorphism was associated in different farm species with different quantitative and qualitative characters with an increased economic importance (Carsai et al. 2005). In cattle the A allele was associated with a high quality meat and carcasses, a higher milk quantity and quality (Leifers et al. 2002). Identification of some polymorphisms in leptin gene and establishment of some associations between these genotypes and food consumption, daily weight gain, adipose tissue quantity, carcass weight, milk quantity and quality, represents a solution for optimization and speeding up of breeding process, by early use in selection of the information provided by this genetic marker.

At the national level data concerning the polymorphism of this genetic marker, especially in other species than cattle, are little. Therefore, the major objective of this study is the sequencing of leptin gene in several individuals belonging to native cattle in order to identify each mutation characterizing each allele form this locus (Carsai et al., 2009). Will be studied improved breeds with a high economical value and unimproved breeds belonging to National Genetic Patrimony, in order to establish the allele frequencies in this locus in Romanian breeds and a better understanding of genetic influence of fat synthesis in adipose tissue. This could represent a very useful information in future national breeding programs and animal products traceability.

REFERENCES