

POLYMORPHISM IS INFORMATIVE QTL MARKER FOR MEAT QUALITY IN BEEF CATTLE

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A b s t r a c t: Acyl-CoA:diacylglycerol acyltransferase-1 (DGAT1) is a key enzyme involved in triglyceride synthesis. DGAT1 gene is located in the centromeric region of the bovine chromosome (BTA) 14 and considered polymorphism was identified as a candidate gene for milk and meat QTLs. One of mutation which is substitution AA GC in exon 8 causes amino acid change in product. The effect of the lysine/alanine (K232A) diallelic polymorphism on meat production traits has been studied.

Genotyped were 156 young Black-and-White (Fresian) steers. The association between diacylglycerol acyltransferase polymorphism and slaughter performance and meat technology analysis was examined. Moreover fatty acid profile (C12-C20:5) including CLA in sample of longissimus dorsi (LD) muscle was evaluated.

Differences ($P < 0.05$) were found between genotypes in slaughtering performance traits as well as fat and retail cuts content and meat-fat ratio. The significant difference occurred also in water holding capacity. Heterozygous individuals AA/GC were characterized by the greatest values compared with homozygous once. Bulls of DGAT1 genotype GC/GC showed significantly higher ($P < 0.05$) content of lauric acid in LD muscle and heterozygous animals differ in CLA content with homozygous AA/AA.

Key words: DGAT1, cattle, beef, gene polymorphism, carcass traits

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