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The effect of calpastatin polymorphism (CAST/HinfI and CAST/Hpy188I) and its interaction with RYR1 genotypes on carcass and pork quality of crossbred pigs

Artur Rybarczyk1*, Marek Kmie?2, Filip Napiera?a2, Wanda Natalczyk-Szymkowska1
1 Department of Evaluation of Livestock Products, Westpomeranian University of Technology, Doktora Judyma 24, 71-466 Szczecin, Poland, 2 Department of Genetics and Animal Breeding, Westpomeranian University of Technology, Doktora Judyma 6, 71-466 Szczecin, Poland

Abstarc :

The aim of the study was to recognize the polymorphism in the calpastatine genes (CAST/HinfI and CAST/Hpy188I) and in the ryanodine receptor gene (RYR1) as well as to establish a possible linkage between the genes variants and carcass and pork quality traits in crossbreds of German Landrace × German Large White or Leicoma × German Large White sows with Pietrain boars. In terms of carcass and pork quality, no significant differences were found between the genotypes CT and CC at the locus RYR1, as well as between AA and AB genotypes at the locus CAST/Hpy188I. On the other hand, a significant effect was identified of the CAST/HinfI polymorphism on pork quality traits. The meat of AB pigs showed a significantly higher pH, lower drip loss and thermal drip, lower WHC, and lower redness and yellowness of colour as compared to BB animals. Furthermore, a significant effect of interaction CAST/HinfI × RYR1 was found in relation to WHC of meat. The results presented indicate that the CAST gene polymorphism identified by HinfI enzyme may be considered important in terms of meat quality traits of the analysed crossbreds. A follow-up study is necessary, however, involving a larger population that would represent all possible genetic variants of the CAST.

Key Word :
calpastatin, carcass, genotype, pigs, pork, RYR1

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