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Influence of RYR1^{T} gene on formation of microstructural traits of *longissimus lumborum* muscle in pigs

Summary

The studies were carried out with 190 pigs, representing the following four groups: Polish Landrace, Pietrain, Zlotnicka Spotted and crossbreds Pietrain x (Polish Large White x Polish Landrace). In every group of animals genotype RYR1 with method PCR/RFLP was qualified. We obtained the following genotypes of animals: RYR1^{CC}, RYR1^{CT} and RYR1^{TT}. The samples of muscle *longissimus lumborum* collected for microstructure studies were frozen with liquid nitrogen. Then, the prepared microscopic preparations were subjected to a histochemical reaction for differentiation of the types of muscle fibers varying in enzymatic activity. Proportion of each muscle fiber types, intramuscular fat content and proportional participation of glycogen in muscle were determined. The aim of investigations was to determine the influence of RYR1 genotype on microstructural traits of *longissimus lumborum* muscle in pigs. The results of histological analyses of the *longissimus lumborum* muscle did not show any influence of RYR1 genotype on proportional participation and diameter of muscle fibre (STO, FTO and FTG) and on intramuscular fat content and proportional participation of glycogen in muscle. Statistical analysis showed only significantly higher number of muscle fibers in RYR1^{CC} genotype compared with RYR1^{TT} in crossbreds Pietrain x (Polish Large White x Polish Landrace).