

Genetic structure of the population of sows Polish Landrace and Polish Large White in locus RYR1, ESR and IGF1R

S u m m a r y

The investigation covered a total of 333 sows, including 160 Polish Landrace (PL) sows and 173 Polish Large White (PLW) sows. The animals originated from 12 reproductive herds of the Kujawy and Pomorze Region. Genotypes for RYR1, ESR and IGF1R genes were identified with the PCR-RFLP method. The frequency of alleles and genotypes for the breed group examined and the share of respective genotypes in the analyzed herds were defined. In the sow population there were found two genotypes (CC and CT) for RYR1 gene both for PL and PLW breed mothers. In groups of PL sows a slightly greater share of stress resistant homozygotes (0.5750) was observed as compared with heterozygotes (0.4250), while in PLW sows genotype CC was much more frequent (0.9306) than in PL breed. Analyzing the genetic structure of examined sows' population for occurrence of genotypes and ESR genes, a variation between breeds was observed. In the PL and PLW sow group AB genotype was most frequent; its frequency was 0.5688 and 0.5087, respectively. The lowest frequency was noted for genotype AA (0.1688) among PL sows, while genotype BB (0.0809) among PLW. Among three genotypes examined for their gene IGF 1 R receptor, definitely most frequent in both breeds was genotype AA; its frequency among PL sows was 0.7313 and for PLW sows - 0.8671. In both breeds only a slight share of genotype BB was noted. Among PL sows allele A frequency was 0.8470 and allele B - 0.1530, while in population of PLW sows estimated frequency of allele A was 0.9249 and allele B -0.0751. In respective sow herds of PL and PLW breeds the share of genotypes and their three analyzed genes varied considerably.