

DIFFERENCES IN BACKFAT THICKNESS AFTER WEANING AND REPRODUCTION TRAITS BETWEEN THE GENOTYPES OF OBESE GENE IN SOWS (WITH REPRODUCTION DISORDERS)

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Abstract. The aim of the present study was to identify polymorphism in the Obese (leptin) gene of crossbred sows with disordered reproduction and to investigate if there are differences between the genotypes of sow Obese (leptin) gene in backfat thickness after weaning, viability of piglets and preservation of piglets until weaning.

The polymorphism of the porcine leptin gene of sows of disordered reproduction and differences between the genotypes of Obese (leptin) gene in backfat thickness after weaning, born piglets' viability and preservation of piglets were analyzed in 85 crossbred sows. The backfat thickness was determined after the last weaning of piglets using a-mode ultrasonography in 3 points (P): P(1) - between 6-7 ribs; P(2) - 10th rib; P(3) - behind the last rib. The number of born alive, stillborn and weaned piglets was estimated from reproductive cards of sows.

DNA samples from the blood of sows for determining polymorphism were obtained by PCR and restricted fragment lengths with restriction enzyme *HinfI* were: 152 bp (allele T) and 84 + 68 bp (allele C).

The frequencies of detected genotypes TT, TC and CC were 0.63, 0.31 and 0.06 respectively of sows with disordered reproduction population. The estimated frequencies of alleles were 0.79 for allele T and 0.21 for allele C.

Based on our research results we found that backfat thickness after weaning in sows of the CC genotype was highest compared to the sows of TT and TC genotypes at: P(1) - 4.6 and 3.1 mm ($P < 0.05$), at P(2) - 5.0 and 4.5 mm ($P < 0.05$) and at P(3) - 3.5 and 2.7 mm ($P < 0.05$) respectively.

The biggest number (52.94 %) of sows with anoestrus after weaning was detected in TT genotype group.

There was no statistically significant difference among different genotypes and the number of born, stillborn piglets, but there was a tendency that sows with CC genotype with a higher backfat thickness had got more live born and less stillborn piglets compared with sows with TC and TT genotype.

We found that preservation of piglets till weaning was best in sows of TT genotype (90.63 %) compared with sows of TC and CC genotypes. The piglets preservation quality for sows with TC and CC genotype was by 0.78 % and 3.25 % lower ($P < 0.05$) respectively.

Keywords: leptin gene, backfat thickness, reproduction disorders, sow.