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ORIGINAL PAPER

Influence of sex of hybrid pigs on the chemical composition of meat and the content of vitamins A, E and cholesterol in the *longissimus dorsi* muscle*

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Abstract

Pork is one of the most commonly consumed meat in Poland, which highlights the importance of research into its composition. Consumers often pay attention to quality. The aim of the study was to determine the effect of sex on the content of vitamins E and A and cholesterol in the *longissimus dorsi* muscle (*musculus longissimus dorsi*, LD) of DanBrad hybrid pigs. A total of 48 samples were collected: 12 each from the carcasses of gilts, entire males, surgically castrated and immunocastrated pigs. Surgical castration was performed between the 2nd and 5th day of the piglets' lives and immunocastration was carried out by intramuscular injection of the Improvac 8 and 4 weeks before slaughter. During fattening, the animals were kept in group pens in a bedding-free system. The criterion for division was the sex of each individual. Feed and water were available *ad libitum* during fattening. A four-phase feeding system was used, based on complete feed mixtures. Slaughter was carried out in accordance with applicable meat industry regulations. Samples of the *longissimus dorsi* muscle from the lumbar region between the 3rd and 4th vertebrae were taken from the cooled right half-carcasses. The content of vitamins A and E, and cholesterol in the tested samples was determined. The chemical composition was also analysed. The highest content of tocopherols was found in the meat of immunocastrated pigs and the lowest in gilts. Statistically significant differences were found between the retinol content in surgical castrated and entire males. In the LD muscle samples of gilts, the cholesterol content was statistically significantly higher than in the samples from males castrated either surgically or immunologically. The results of the study indicated significant and highly significant variation in the basic chemical composition between LD samples from animals in the different groups. Further studies of larger sample sizes meat are needed to confirm or refute the current findings.

Keywords: cholesterol and vitamins, sex, pigs, chemical composition, meat quality

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