

THE INFLUENCE OF GENETIC FACTORS ON PORK QUALITY

Vigilijus Jukna, Česlovas Jukna, Nijolė Pečiulaitienė

Lithuanian Veterinary Academy, Laboratory of Meat Characteristics and Quality Assessment, Tilžės 18, Kaunas LT-47181, tel.36 34 14; e-mail: nijole@lva.lt

Summary. The present study was designed to investigate the influence of genetic factors on meat quality in Large White, Yorkshire, Landrace and Lithuanian White breed pigs. Four boars from each breed were selected. For analysis of each boar 3 sows offspring was used. Two offspring from each sow nest were randomly selected and evaluated. Analysis of results of meat physical traits have shown significant differences between different boars offspring. In different boars offspring the highest statistically significant differences were registered comparing meat colour (L*), meat pH, meat cooking loss percentage and shear force kg/cm² (P<0.05-P<0.01). There were no significant differences in the offspring meat colour (b*) and percentages of drip loss and water binding capacity (P>0.05). Further, boars have shown influence on the offspring meat chemical composition. In addition, statistically significant differences in different boars offspring meat dry matter, intramuscular fat and ash amounts were observed (P<0.05).

Analysis of variance (ANOVA) showed significant influence of the sows and boars on offspring meat quality. Sows had the highest statistically significant influence on the offspring meat water binding capacity which varied at 59.0 % level (p≤ 0.001). Boars had the highest statistically significant influence on the offspring meat drip loss which varied at 45.1 % (p≤ 0.001) and the lowest variation was registered in intramuscular fat amount –25.8 % (p≤ 0.05), respectively. In conclusion, the results from this study indicate that estimating and clarifying the optimal combinations of boars and sows is a positive factor to improve the quality of pork.

Key words: boars, sows, breed, pork, meat quality.