

INFLUENCE OF BOARS ORIGIN AND USEFULNESS ON THE REPRODUCTIVE PERFORMANCE OF SOWS

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Abstract. The results presented in this manuscript originate from a breeding farm keeping a foundation herd of 240 sows of the Polish Large White (PLW) breed. Out of 65 PLW boars bred at the farm within the last three years, 8–10 boars were selected at random that were born in litters 1–2 and 3–5 (groups I and II). Another 8 boars were born in the successive 6–8 litters of long-living mothers (group III). Out of all 26 boars selected (40% of 65 boars were kept at the farm), 14 were reared in large mother's litters – group *A* (mean number of piglets at the age of 21 days – over 10.1), and 12 boars originated from less fertile mothers – group *a* (10 and less piglets at the age of 21 days). This way of dividing boars into experimental groups was used to show the difference among the ones reared by sows of high and low fertility.

The boars born in litters of long-living sows (6–8 – group III) and of highly fertile sows (group A) were characterized by the highest adjusted daily gains at the age of 180 days. They additionally had a tendency for deposition of lesser backfat determined with the performance test ($P < 0.01$). Sows that were mated by the boars originating after mothers from group *A* were characterized by a higher number of piglets in a litter and a higher weight of litter at the age of 21 days ($P < 0.05$ and 0.01) than the sows mated with the boars originating after mothers from group *a*. A greater litter size by 0.8 – 1.0 piglet was reported in subgroups IA, IIA and IIIA. The coefficient of correlation between litter size of boars' mothers and fertility of sows mated by those boars was positive ($r = 0.182$), whereas between mothers' fertility and litter size at the age of 21 days it was higher ($r = 0.233$ – tendency for better viability of piglets). The adjusted daily gains of the boars were highly significantly correlated with the number of piglets at the age of 21 days in the litters of sows mated by those boars ($r = 0.184$ and $r = 0.259$ respectively) and with litter body weight ($r = 0.309$), which indicates that body weight gains of the boars and high fertility of their mothers are good prognostic indicators of their future reproductive performance. Presumably, those traits are linked with greater resistance to environmental conditions.

Keywords: pigs, boars origin, results of boars performance test, reproductive traits of sows, correlations