

O. V. Vaschenko. Pig productivity under pure breeding and crossbreeding

For the research the groups were formed by method of analogues based on origin, age, physiological state, live weight. Studying sperm productivity, the number of ejaculates obtained during the year, average volume, concentration, and the total number of spermatozoa in the ejaculate were taken into account and conducted according to conventional techniques using a digital photometer "SDM-30" produced by "Minitüb". Indicators of economical useful traits of the test animals were calculated according to primary zoo-technical accounting by standard methods of biometric analysis. To determine breeding value of animals by the BLUP method, software developed at the Institute of Pig Breeding "System determining the breeding value of pigs" was used. In carrying out the work, population genetics and mathematical methods were applied for studying of patterns of variability, repeatability, assessment of the genotype of animals.

Reproductive quality of the sows was assessed by multiparity (total number of piglets at farrowing), prolificacy (piglet's weight at birth, kg), milk ability (total weight of litter at 21 days, kg) piglet's weight at weaning and survival of offspring to weaning. Survival of piglets, homogeneity and uniformity of litter were determined by modified M. D. Berezovsky – D. V. Lomako index and V. P. Kovalenko homogeneity index. Growth and development were controlled by change of individual live weight via weighing. Average daily gain was determined based on the initial and final live weight and number of days between weightings.

Dynamics of indicators of growth and development, maternal qualities of sows and sperm productivity and fertility of boars at the purebred animal of initial breeds and live weight and age at 100 kg in the hybrids of first generation were studied. The youngsters obtained at crossbreeding Large White breed of domestic and foreign selection with Landrace had the best indicators of growth and development than the purebred counterparts in all age periods. Higher live weight at weaning at age of 60 days was typical for combination ♀LWE x ♂LE and ♀LE x ♂LWE; it is quite natural, because they had lower average number of piglets at weaning. For maturing volumes of back of the carcass and a well-developed layer of fat should be adjusted to Landrace sows and Large White boars. Fattening of commercial hybrids obtained by this scheme under Ukrainian conditions is advisable to check out at animal's live weight of 115 ... 120 kg.

Significant correlations were proven on the basis of: BLUP index – back fat thickness at the level of the 6-7 thoracic vertebra – $-0,221 \pm 0,0938$ (tr = 2,35), BLUP index – back fat thickness on sacrum – $-0,298 \pm 0,0898$ (tr = 3,31), BLUP index – back fat thickness at the midpoint of the back between the withers and sacrum – $-0,239 \pm 0,0929$ (tr = 2,57), BLUP index – body length – $-0,338 \pm 0,0873$ (tr = 3, 86), BLUP index – multiparity – $-0,294 \pm 0,0900$ (tr = 3,26), BLUP index – total weight of the litter at the date of weaning – $-0,233 \pm 0,0932$ (tr = 2,49). Keeping the selection process towards selection and combination of parental pairs by BLUP method is one of the ways to increase the productive capacity of the animals.

According to the research it was found that asymmetry of testes sizes was observed together with individual peculiarities of testes form at the same breeding boars. Testes have physiological asymmetry. Ratio of areas of the left testes to right was $S_l/S_r = 1.04$, and volumes respectively $V_l/V_r = 1.20$, on average, left testes by their areas were 2.7% more than the right, and by volumes – 14.6% respectively.

Comparing the live weight of boars with weight of their testes does not have a logical pattern. The average weight of testes was 0.14% of the live weight of breeding boars. Total volume of ejaculate on a group of boars was $355,3 \pm 16,9$ ml. The concentration of sperm in the ejaculate was $64,2 \pm 4,6$ billion, activity – $8,7 \pm 0,2$ points. The studies found that boars with greater weight of testes produce sperm with more sperm concentration and that's why more sperms in the ejaculate were obtained from them.

Combination of Landrace and Large White breeds is apposite for obtaining precocious pigs with well-developed layer of fat at the 6-7 thoracic vertebra and high level of prolificacy (1,8-1,9 kg).

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