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COMPARATIVE ASSESSMENT OF ECONOMIC TRAITS OF PIGS OF DIFFERENT BREEDS AND BREED COMBINATIONS

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Abstract. On the territory of Ukraine, for decades, the pig industry has traditionally remained one of the main reserves for ensuring the financial well-being of the population. Among the factors contributing to the profitability of pig breeding enterprises, a significant role is played by the breeding capacity of sows, since it guarantees the receipt of livestock for rearing and fattening. An indisputable condition for ensuring the efficiency of pig production is to increase the fattening and meat characteristics of pigs. With this in mind, the purpose of the study is to investigate the above-mentioned economic traits of pigs, which is currently an urgent task. The research was preceded by the establishment of three groups of sows and young stock, numbering 10 animal units each, located in similar economic conditions. According to the investigational plan, three groups of pigs are provided depending on the genotype: control group 1 – Large White (LW); experimental group 2 – Landrace (L); experimental group 3 – 1/2LWx1/2L (maternal base – Large White, paternal – Landrace). As a result of the conducted studies, it was found out that the local pig population obtained from crossing purebred animals of the Large White and Landrace breeds prevailed in terms of productivity over the original parent forms. From them, on average for three farrowing operations, the largest number of piglets at birth and the highest multiplicity were obtained. An unreliable correlation was found between the characteristics of the reproductive ability of sows and the number of farrowing. The correlation coefficient between the farrowing number and the number of piglets at birth had a negative value – -0.013; for fertility – positive – +0.038; for the offspring size – +0.014; milking capacity – +0.044. At the age of 1, 2, 3, 5, and 6 months, local young stock had the highest live weight, and the Large White pigs had the lowest values with significant differences ($P \leq 0.05-0.001$). The Landrace pigs had the highest live weight at birth and at the age of 4 months, and the Large White pigs had the lowest live weight ($P \leq 0.05-0.001$). The findings allow increasing the efficiency of the pig industry and prove the expediency of interbreeding in order to increase the economic traits of pigs

Keywords: sows, breeding capacity, young stock, live weight, Large White breed, Landrace breed, local livestock population, correlation



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INTRODUCTION

The ability of the state to provide the population with high-quality food products is guaranteed by the availability of appropriate resources, among which the pig industry covers the demand for meat consumption by 35%. Transformational changes on the way to the European integration aspirations of the agricultural sector of Ukraine cause changes in the development and functioning of the pig industry [1; 2]. On the territory of Ukraine, pig breeding has always been one of the main sources of profit and prosperity of the state. In the history of Ukrainian animal husbandry, there were times when the share of pork in total meat production reached 55-60% [3].

The market situation forces pig breeding enterprises to look for ways to reduce the cost of production and improve its quality [4]. Therefore, today, the development of pig breeding, as an industry with a large production potential, is marked by an in-depth use of available resources and provides for the introduction of well-organized breeding work [5]. Currently, 12 stud pig breeds are bred at farms of Ukraine, which serve as maternal and paternal forms in breeding and can improve the pork production indicators [6].

In addition, to increase productivity and improve the desired characteristics of pigs, crossing and hybridization are widely used, but it is necessary to take into account the different level of manifestation of the phenomenon of heterosis in offspring [7]. A number of scientists report that the use of specialized breeds, types and lines for crossing pigs contributes to the growth of fattening and meat characteristics, but does not lead to a significant improvement in the parameters of the reproductive ability of sows [5; 8; 9]. However, there are also opposing views on the influence of growth intensity on the meat qualities of pigs [4]. It is important to establish links between the productive characteristics of pigs, especially when improving breeds based on meat characteristics [10].

It is also worth noting that the reproductive qualities of sows largely determine the production efficiency since they provide the necessary supply of livestock for rearing and fattening. Hence, increasing the efficiency of using sows and obtaining high fertility is one of the main vectors of pig breeding, along with the development of new criteria for evaluating, selecting and predicting the reproductive qualities of sows [11; 12].

The most common on the territory of Ukraine are two breeds of pigs – the Large White and Landrace [6]. The widespread use of the Large White pigs in the breeding process is conditioned by their high breeding value for the main productive characteristics [13-15]. Along with this, studies have proven that the Landrace pigs are also characterized by high productive characteristics, so they can be used as paternal and maternal forms in various variants of crosses [4; 7; 16]. Reproductive indicators and the duration of use of the Large White

and Landrace breeds can be improved by introducing modern breeding techniques [17; 18].

Therefore, taking into account the above, *the purpose of the study* was to investigate the parameters of the breeding capacity of sows and the dynamics of the live weight of young stock of the Landrace and Large White breeds and the local livestock obtained from their crossing.

MATERIALS AND METHODS

In the furtherance of this goal, materials on the breeding and productive use of pigs in the SE RS “Nova Peremoha” of the Lyubarsky District of Zhytomyr Oblast were processed. The study was carried out in 2017-2020. The digital material was processed using the variational statistics [19; 20]. As for the results of mathematical calculations, they were considered statistically reliable if $P \leq 0.05$ (*), $p \leq 0.01$ (**), and $P \leq 0.001$ (***). The mathematical data was processed using the Microsoft Office Excel software package.

For the research, 3 groups of sows and 3 groups of young stock with 10 animal units each were established. According to the investigational plan, three groups of pigs are provided depending on the genotype: control group 1 – Large White (LW); experimental group 2 – Landrace (L); experimental group 3 – 1/2LWx1/2L (maternal base – Large White, paternal – Landrace) – Table 1.

Table 1. Genotypic composition and number of animal groups for research

Animal group	1	2	3
Animal genotype	LW	L	1/2LWx1/2L
Number of animals in a group	10	10	10

Note: hereinafter LW – Large White pig breed; L – Landrace breed

The selected experimental animals were similar in age and live weight, and were also in the same conditions of keeping, feeding, use, and care.

For the study, the breed of animals was established according to breeding certificates and materials of breeding and zootechnical accounting. Feeding of experimental animals was carried out according to the rations characteristic of the farm placement zone, balanced in terms of nutrient content and in accordance with zootechnical standards. The breeding capacity of sows was studied by the following indicators: fertility (determined by the number of live born, viable piglets per farrowing); offspring size (average weight of one piglet in the offspring at birth); milking capacity (live weight of the nest at 21 days of age) [21]. The live weight of young pigs was studied based on the results of individual weighing after birth and at the age of 1, 2, 3, 4, 5 and 6 months.

RESULTS AND DISCUSSION

Effective use of sows in the process of reproduction is one of the main directions in pig breeding [11; 12], which determines the relevance of studying the parameters of the breeding capacity of sows. Based on this, the analysis of indicators of the breeding capacity of

sows of different breeds and breed combinations for several farrowing was carried out.

According to the results of the first farrowing received from sows, the reproducible qualities of sows were good (Table 2).

Table 2. Indicators of the breeding capacity of sows of different genotypic groups for the first farrowing

Attributes and units of measurement	Animal groups (M)			Difference between groups					
	1	2	3	1-2		1-3		2-3	
	LW	L	1/2LW 1/2L	d	t _d	d	t _d	d	t _d
Number of newborn piglets, units	11.25± 0.299	12.11± 0.323	12.51± 0.451	-0.86	1.95	-1.26	2.33	-0.40	0.72
Fertility, units	10.48± 0.268	11.12± 0.268	11.88± 0.298	-0.64	1.69	-1.40	3.49	-0.76	1.90
Offspring size, kg	1.49± 0.032	1.60± 0.031	1.51± 0.029	-0.11	2.47	-0.02	0.46	0.09	2.12
Milking capacity, kg	64.23± 1.789	65.22± 1.998	65.37± 0.996	-0.99	0.37	-1.14	0.56	-0.15	0.07

Note: hereinafter, M – arithmetic mean, d – the difference between the arithmetic mean, and t_d – the validity of the difference

Among the studied traits, the number of piglets at birth and their size, fertility, and milking capacity reached the highest values in local sows of genotypic group 3 (1/2bx1/2L). The latter with a significant difference prevailed purebred sows and the genotypic group 1 (Large White breed) in terms of the number of offsprings by 1.26 units (P≤0.05), fertility – by 1.4 units (P≤0.01), but in terms of milking capacity, there was no probable advantage between sows of different groups (Table 2).

The biggest size of offspring was observed in the first farrow of the purebred Landrace pigs, which, according to the investigational plan, were assigned to the II genotypic group. Their significant advantage over sows of control group 1 was 0.11 kg (P≤0.05) and group 3,

respectively, 0.09 kg (P≤0.05). To achieve this goal, the parameters of the reproductive function of sows were analyzed based on the results of the second farrowing (Table 3). As a result of the analysis, the following features were revealed: most newborns were obtained from group 1, animals of group 3 were characterized by the highest fertility and milking capacity, while the animals of group 2 were distinguished by the offspring size. However, as for establishing the reliability of comparing indicators, a significant advantage was found only for the offspring size of sows from group 2 over 1 (0.11 kg at p≤0.05). No statistically significant differences were found for the other features studied (Table 3).

Table 3. Indicators of the breeding capacity of sows of different genotypic groups for the second farrowing

Attributes and units of measurement	Animal groups (M)			Difference between groups					
	1	2	3	1-2		1-3		2-3	
	LW	L	1/2LW 1/2L	d	t _d	d	t _d	d	t _d
Number of newborn piglets, units	12.68± 0.439	11.87± 0.347	12.48± 0.501	0.81	1.45	0.20	0.30	-0.61	1.00
Fertility, units	11.09± 0.348	11.10± 0.351	11.86± 0.368	-0.01	0.02	-0.77	1.52	-0.76	1.49
Offspring size, kg	1.50± 0.027	1.61± 0.030	1.59± 0.039	-0.11	2.73	-0.09	1.90	0.02	0.41
Milking capacity, kg	64.61± 1.865	65.53± 1.182	65.77± 1.293	-0.92	0.42	-1.16	0.51	-0.24	0.14

As a result of the assessment of sows of the studied breeds and breed combinations in terms of reproductive qualities for the third farrowing, certain differences were established between them (Table 4). Thus, purebred Large White pigs of the first experimental group were noted by the lowest fertility and the offspring size, lowest milking capacity; the smallest number of piglets

born was observed in sows of the Landrace breed, which belonged to group 2. At the same time, the best parameters of breeding capacity, namely the largest number of piglets at birth, fertility, and milking capacity were observed in the local sows of group 3, and the biggest size – in animals of group 2 by genotype.

Table 4. Indicators of reproductive capacity of sows of different genotypic groups for the third farrowing

Attributes and units of measurement	Animal groups (M)			Difference between groups					
	1	2	3	1-2		1-3		2-3	
	LW	L	1/2LW 1/2L	d	t _d	d	t _d	d	t _d
Number of newborn piglets, units	12.51± 0.589	11.91± 0.671	13.08± 0.464	0.60	0.67	-0.57	0.76	-1.17	1.43
Fertility, units	10.47± 0.355	10.54± 0.388	11.69± 0.389	-0.07	0.13	-1.22	2.32	-1.15	2.09
Offspring size, kg	1.50± 0.022	1.69± 0.158	1.61± 0.024	-0.19	1.19	-0.11	3.38	0.08	0.50
Milking capacity, kg	65.02± 0.872	65.81± 1.894	65.97± 1.098	-0.79	0.38	-0.95	0.68	-0.16	0.07

A significant advantage of animals of group 3 over group 1 in terms of fertility and the offspring size was established ($P \leq 0.05-0.01$), over animals of group 2 – only in terms of the number of offspring ($P \leq 0.05$). According to the rest of the considered indicators, the difference obtained between sows of different genotypic groups did not have statistically significant values.

Analysis of the parameters of the breeding capacity of sows of different breeds and breed combinations on average for all three farrowing showed the presence

of differences between them (Table 5). According to the findings of the conducted studies, the largest number of piglets at birth and fertility were observed in local sows of the genotypic group 3. While animals of the Landrace breed, assigned to genotypic group 2, were characterized by the biggest size and milking capacity. However, when comparing the above-mentioned indicators of sows of different experimental groups, significant differences were established only for two of them – the number of offspring and fertility in groups 1 and 3 ($P \leq 0.05$).

Table 5. Indicators of breeding capacity of sows of different genotypic groups on average for three farrowing

Attributes and units of measurement	Animal groups (M)			Difference between groups					
	1	2	3	1-2		1-3		2-3	
	LW	L	1/2LW 1/2L	d	t _d	d	t _d	d	t _d
Number of newborn piglets, units	12.13± 0.532	11.95± 0.487	12.69± 0.398	0.18	0.25	-0.56	0.84	-0.74	1.18
Fertility, units	10.68± 0.344	10.98± 0.236	11.77± 0.345	-0.30	0.72	-1.09	2.24	-0.79	1.89
Offspring size, kg	1.50± 0.028	1.64± 0.088	1.60± 0.028	-0.14	1.52	-0.1	2.53	0.04	0.43
Milking capacity, kg	64.48± 1.209	65.73± 1.605	65.66± 1.181	-1.25	0.62	-1.18	0.70	0.07	0.04

There is an unreliable correlation between the parameters of the breeding capacity of sows and the number of their farrowing. Thus, between the farrowing number and the number of newborn piglets, the correlation coefficient had a negative value – -0.013,

between the farrowing number and fertility – a positive value – +0.038; between the farrowing number and offspring size – +0.014; between the farrowing number and milking capacity – +0.044.

When studying the economic traits of pigs of

different breeds and breed combinations, it was also aimed to investigate the dynamics of live weight of young stock at birth and at the age of 1, 2, 3, 4, 5, and 6 months (Table 6).

Purebred animals of the Landrace breed from genotypic group 2 had the highest live weight at birth and at 4 months of age, while the Large White pigs of group 1 had the lowest values. At the age of 1, 2, 3, 5 and 6 months, the highest live weight was observed in local young stock of the experimental group 3, the

lowest live weight – in the Large White breed belonging to group 1. As a result of establishing the levels of reliability of differences, a significant advantage was revealed at the age of 1, 2, 3 and 5 months in animals of the genotypic group 3 over group 1 ($P \leq 0.05-0.001$); at the age of 2 and 3 months – a highly reliable advantage over group 2 ($P \leq 0.001$); a significant advantage in live weight at birth and at age of 4 months in young stock of group 2 over group 1 ($P \leq 0.05$).

Table 6. Dynamics of live weight of young pigs of different genotypic groups

Attributes and units of measurement	Animal groups (M)			Difference between groups					
	1	2	3	1-2		1-3		2-3	
	LW	L	1/2LW 1/2L	d	t _d	d	t _d	d	t _d
At birth	1.47± 0.019	1.57± 0.031	1.50± 0.023	-0.10	2.75	-0.03	1.01	0.07	1.81
1 st month	7.78± 0.213	8.15± 0.451	8.64± 0.249	-0.37	0.74	-0.86	2.62	-0.49	0.95
2 nd month	20.13± 0.755	21.04± 0.562	25.27± 0.758	-0.91	0.97	-5.14	4.80	-4.23	4.48
3 rd month	35.49± 0.627	33.44± 0.871	39.03± 1.019	2.05	1.91	-3.54	2.96	-5.59	4.17
4 th month	49.97± 0.776	53.05± 1.209	51.48± 1.287	-3.08	2.14	-1.51	1.00	1.57	0.89
5 th month	73.71± 1.134	76.28± 0.989	78.51± 1.603	-2.57	1.71	-4.80	2.44	-2.23	1.18
6 th month	94.55± 1.591	96.49± 1.407	98.96± 1.815	-1.94	0.91	-4.41	1.83	-2.47	1.08

Thus, a comparison of the productive characteristics of pigs of different breeds and breed combinations showed the superiority of local pigs over purebred animals of the Large White and Landrace breed. The studies by L.P. Hryshyna and O.O. Krasnoshchok [4], M.M. Poruchnik [12], R.P. Shvachka and N.G. Povod [22], E.I. Karateeva and A.N. Rudenko [23] show similar results in terms of the main indicators of breeding capacity of local sows. The advantage of local livestock over the original parental forms in terms of meat qualities was also noted by A.I. Kislinska and G.I. Kalinichenko [24], S. Voitenko and B. Shaferivsky [25], M.O. Petrenko and S.L. Voitenko [26], R.P. Shvachka and N.G. Povod [22].

CONCLUSIONS

According to the investigated characteristics of productivity, the local pig population with the 1/2LWx1/2L genotype prevailed over purebred Large White and

Landrace pigs. Thus, on average for three farrowing operations, the largest number of piglets at birth and highest fertility were obtained. An unreliable correlation was established between the characteristics that characterize the reproductive ability of sows and the number of farrowing received from them: between the farrowing number and the number of piglets at birth, the correlation coefficient had a negative value – -0.013, between the farrowing number and fertility – positive – +0.038; between the farrowing number and the offspring size – +0.014; between the farrowing number and milking capacity – +0.044. At the age of 1, 2, 3, 5, and 6 months, local young stock had the highest live weight, and the Large White pigs had the lowest values with significant differences ($P \leq 0.05-0.001$). The Landrace pigs had the highest live weight at birth and at the age of 4 months, and the Large White pigs had the lowest live weight ($P \leq 0.05-0.001$).

REFERENCES

- [1] Hryshchenko, N.P. (2017). Development of pig breeding in Ukraine. *Scientific Bulletin of the National University of Life and Environmental Sciences of Ukraine*, 271, 16-23.

- [2] Zasukha, Y.V., Getya, A.A., Kondratiuk, V.M., & Grishchenko, S.M. (2016). The impact of wet and dry feeding methods on fattening pigs. *Journal "Gyvininkystė" (Animal Husbandry)*, 64, 40-48.
- [3] Voloshchuk, V. M. (2014). Status and prospects of the pig industry. *Bulletin of Agricultural Science*, 2, 17-20.
- [4] Hryshyna, L.P., & Krasnoshchok, O.O. (2019). Meat quality of purebred, crossbred and hybrid young pigs of varying growth rates. *Bulletin of Agrarian Science of the Black Sea Region*, 3, 98-106. doi: 10.31521/2313-092X/2019-3(103)-12.
- [5] Andriychuk, V.F., & Shulyar, A.L. (2017). Physical and chemical properties of meat and lard of pigs. *Bulletin of Sumy National Agrarian University*, 5/2 (32), 6-10.
- [6] Gladiy, M., Voitenko, S., & Vyshnevsky, L. (2014). Genealogical structure and efficiency of grown piglets of modern breeds. *Livestock of Ukraine*, 11, 10-14.
- [7] Voytenko, S., & Petrenko, S. (2015). Efficiency of Landrace pigs breed. *Bulletin of Agrarian Science of the Black Sea Region*, 1, 171-179.
- [8] Lazovsky, A.A., & Nikitenko, N.M. (2012). The effectiveness of the use of sows of different genotypes to improve the meat qualities of marketable young. In *Zootechnical science: History, problems, prospects: Materials of the II International scientific-practical Conference* (pp. 210–211). Kamyanets-Podilsky.
- [9] Lisny, V.A., Lisna, T.M., & Novitskaya, V.I. (2011). Efficiency of using a promising gene pool of pigs in the hybridization system. *Taurian Scientific Bulletin*, 76, 2, 15-18.
- [10] Cabling, M.M., Kang, H.S., Lopez, B.M., Jang, M., Kim, H.S., Nam, K.C., Choi, J.G., & Seo, K.S. (2015). Estimation of genetic associations between production and meat quality traits in duroc pigs. *Asian-Australasian Journal of Animal Sciences*, 28(8), 1061-1065. doi: 10.5713/ajas.14.0783.
- [11] Kramarenko, S., Barkar, Ev., & Shportaliuk, H. (2008). The influence of the genotype and age on the peculiarities of the large white females reproduction traits. *Bulletin of Agrarian Science of the Black Sea Region*, 1, 171-176.
- [12] Poruchnik, M.M. (2014). Evaluation of sows reproductive qualities depending on genotype. *Bulletin of Agrarian Science of the Black Sea Region*, 2, 186-191.
- [13] Khalak, V., Gutyj, B., Stadnytska, O., Shuvar, I., Balkovskyi, V., Korpita, H., Shuvar, A., & Bordun, O. (2021). Breeding value and productivity of sows of the Large White breed. *Ukrainian Journal of Ecology*, 11(1), 319-324. doi: 10.15421/2021_48.
- [14] Taylor, G., Roese, G., & Hermesch, S. (2005). Breeds of pigs – Large White. *Primefact*, 62. Retrieved from https://www.dpi.nsw.gov.au/_data/assets/pdf_file/0008/45566/Breeds_of_pigs_-_Large_White_-_Primefact_62-final.pdf.
- [15] Khalak, V., Gutyj, B., Bordun, O., Horchanok, A., Ilchenko, M., Smyslov, S., Lytvshchenko, L., & Kuzmenko, L. (2020). Large White breed sows. *Ukrainian Journal of Ecology*, 10(4), 122-126. doi: 10.15421/2020_178.
- [16] Taylor, G., Roese, G., & Hermesch, S. (2005). Breeds of pigs – Landrace. *Primefact*, 63. Retrieved from https://www.dpi.nsw.gov.au/_data/assets/pdf_file/0008/45557/Breeds_of_pigs-Landrace_-_Primefact_63-final.pdf.
- [17] O'Dowd, S., Hoste, S., Mercer, J., Fowler, V., & Edwards, S. (1993). Nutritional modification of body composition in genetically lean breeding sows and the consequences for reproductive performance. *Proceedings of the British Society of Animal Production*, 64-65. doi: 10.1017/S0308229600023904.
- [18] Khalak, V., Gutyj, B., Bordun, O., Horchanok, A., Ilchenko, M., Smyslov, S., Kuzmenko, O., & Lytvshchenko, L. (2020). Development and reproductive qualities of sows of different breeds: Innovative and traditional methods of assessment. *Ukrainian Journal of Ecology*, 10(2), 356-360. doi: 10.15421/2020_109.
- [19] Plokhinsky, N.A. (1961). *Biometrics*. Moscow: MGU.
- [20] Merkuryeva, E.K. (1970). *Biometrics in the selection and genetics of agricultural animals*. Moscow: Kolos.
- [21] Gerasimov, V. I., Zasukha, Y. V., Nagaevich, V. M., Tsitsyursky, L. M., Danilova, T. M., Voloshchuk, V. M., & Sokrut, V.I. (2003). *Workshop on pig breeding and technology of pork production*. Kharkiv: Espada.
- [22] Shvachka, R.P., & Povod, N.H. (2020). Influence of the factors of the variant of combination of breeds and duration of the lactation period on reproductive qualities of sows. *Bulletin of Sumy National Agrarian University. Series Livestock*, 1(40), 94-102. doi: 10.32845/bsnau.lvst.2020.1.14.
- [23] Karateeva, E.I., & Rudenko, A.N. (2018). Combination variability of reproductive function of piglets of Large White breeds different methods of breeding. *Young Scientist*, 1(53), 7-9.
- [24] Kislinskaya, A., & Kalinichenko, H. (2015). Growth indicators of different combinations of young pigs of Large White breed in the Hungarian selection in postadoption period. *Bulletin of Agrarian Science of the Black Sea Region*, 2(1-2), 137-142.
- [25] Voitenko, S., & Shaferivsky, B. (2013). Genotype of pigs and its influence on fattening traits. *Bulletin of Sumy National Agrarian University. Series: Livestock*, 1(22), 26-28.
- [26] Petrenko, M.O., & Voitenko, S.L. (2011). Landrace pigs for purebred breeding and crossbreeding. *Scientific Bulletin of Stepan Gzhytskyi National University of Veterinary Medicine and Biotechnologies Lviv*, 4(50), 146-149.

ПОРІВНЯЛЬНА ОЦІНКА ПРОДУКТИВНИХ ОЗНАК СВИНЕЙ РІЗНИХ ПОРІД І ПОРОДНИХ ПОЄДНАНЬ

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Анотація. На території України впродовж десятиліть галузь свинарства традиційно залишається одним із головних резервів забезпечення фінансового добробуту населення. Серед факторів, що сприяють дохідності свинарських підприємств, вагома роль належить відтворній здатності свиноматок, позаяк гарантує надходження поголів'я для вирощування і відгодівлі. Беззаперечною умовою забезпечення ефективності виробництва продукції свинарства є підвищення відгодівельних і м'ясних ознак свиней. З огляду на це, метою досліджень було вивчення вищезазначених продуктивних ознак свиней, що наразі є актуальним завданням. Проведенню досліджень передувало формування трьох груп свиноматок і молодняку, чисельністю 10 голів кожна, що знаходилися в аналогічних господарських умовах. Відповідно до схеми дослідження передбачено три групи свиней залежно від генотипу: I контрольна – велика біла (ВБ); II дослідна група – ландрас (Л); III дослідна група – 1/2ВБх1/2Л (материнська основа – велика біла, батьківська – ландрас). У результаті проведених досліджень з'ясовано, що помісне поголів'я свиней, отримане від схрещування чистопородних тварин великої білої та породи ландрас, переважало за ознаками продуктивності вихідні батьківські форми. Так, у середньому за три опороси від них було одержано найбільшу кількість поросят при народженні та найвищу багатоплідність. Між ознаками відтворної здатності свиноматок і номером їх опоросу виявлено недостовірний кореляційний зв'язок: між номером опоросу та кількістю поросят при народженні коефіцієнт кореляції мав від'ємне значення та становив $-0,013$, багатоплідністю – додатне і складав $+0,038$; великоплідністю – $+0,014$; молочністю – $+0,044$. У 1-, 2-, 3-, 5- та 6-місячному віці найвищу живу масу мав помісний молодняк за найнижчих значень тварин великої білої породи за достовірних різниць ($P \leq 0,05 - 0,001$). Найбільшу живу масу при народженні та у 4-місячному віці мали тварини породи ландрас, найменшу – великої білої ($P \leq 0,05 - 0,001$). Встановлені результати досліджень дозволяють підвищити ефективність галузі свинарства та доводять доцільність проведення міжпородного схрещування з метою підвищення продуктивних ознак свиней

Ключові слова: свиноматки, відтворна здатність, молодняк, жива маса, велика біла порода, порода ландрас, помісне поголів'я, кореляція