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Reproductive and fattening quality of pigs various genotypes.

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ABSTRACT

When crossing manifested heterosis effect on reproductive and fattening qualities. The best results have been crossbred sows covered cross-bred boars. In fattening qualities, it is the most productive hybrids combined (1/2 PM-1 + 1/4 LF + 1/4 LC). This combination is recommended to create a new specialized type of pigs.

Keywords: precocious meat breed, Landrace breed, mating, reproduction quality, feeding qualities.

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INTRODUCTION

The widespread introduction of interlinear hybridization hampered by the lack of regional systems of breeding pigs special types and lines with a high level of genetic consolidation and high combining ability when crossed [1, 5, 8]. The acute need for the types of inbreeding is motivated by the fact that the breeding of spent significantly less time than the creation of the breed; these relatively small groups of more labile and easily served changes when the direction selection and values of selection pressure, as well as reducing or increasing the number of selection indicators [2, 3, 7].

In the continuation of the search for the optimal combination of rock to create a new specialized type of pigs in the pig-breeding complex "Polus" KCR experimental studies have been conducted.

MATERIALS AND METHODS

For the experiment, a group of young replacement were selected 30 purebred and 30 crossbred pigs, of which formed the control and experimental groups. Animals were selected on the basis of analogues with a live weight of 135 - 140 kg.

By the pigs according to the scheme selected mating boars were selected for mating, which was conducted in October 2012 (Table 1).

The first group used purebred animals Krasnodar precocious meat breed type (PM-1).

The experimental groups were used hybrids (50% of PM-1 x 25% of the French Landrace breeding (LF) x 25% Landrace Canadian selection (LC).

Table 1: Crossbreeding scheme

Group	Breed, type, species	
	sows	hogs
I	PM-1, Krasnodar type	PM-1, Krasnodar type
II	50%PM -1x25%LFx25%LC	50% PM -1x25%LFx25% LC
III	PM-1, Krasnodar type	50% PM -1x25%LFx25% LC
IV	50%PM -1x25%LFx25% LC	PM -1, Krasnodar type

The animals were kept on the technological platform, and then in the pits for farrowing, substandard zoohygienic requirements.

Evaluation of the productivity of sows was carried out by conventional methods.

After the growing of each nest on the principle of analogues were selected by two pigs (one pig and one hog) in all 30 pigs from each group and placed on control fattening.

RESULTS AND DISCUSSION

The results of our study confirmed the high reproductive performance of sows involved in research.

Table 2: Reproductive qualities of sows

Indicator	Group			
	I	II	III	IV
The number of sows, goal	15	15	15	15
Multiple pregnancy, goal	10,8±0,19	12,0±0,14	11,8±0,20	11,67±0,18

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Macrocarpa, kg	1,45±0,03	1,60±0,03	1,47±0,03	1,52±0,03
The number of piglets in the 21 day, goal	10,33±0,31	11,53±0,22	11,13±0,13	11,00±0,17
The weight of one piglet at 21 days, kg	5,10±0,08	5,64±0,08	5,47±0,09	5,50±0,09
Milkiness, kg	52,68±1,64	65,03±1,50	60,88±1,82	60,50±1,49
Weight of nest 28 days, kg	69,00±1,08	88,83±1,68	83,27±1,46	82,30±1,47
Weight 1 pig of 28 days, kg	6,90±0,08	7,84±0,05	7,57±0,07	7,53±0,08
The number of pigs in 28 days, goal	10,00±0,17	11,33±0,19	11,00±0,17	10,93±0,13

As a result, production experience has been revealed that the highest multiple pregnancy (12.0 goals) have crossbreed sows fertilized by crossbreed boars (II group), which is more by 1.2 piglets than in controls and 0.20 and 0.33 goals in the third and fourth groups, respectively. Sows all experimental groups was significantly superior to the control group counterparts on prolificacy.

Macrocarpa as an indicator of physiological fetal development, the state of his immune system which causes the further development and growth of piglets, in all the experimental groups was higher than in the control. Sows II, III, IV experimental groups were superior to the control group in this indicator 150 g, 20 g and 70 g, respectively.

Sows all experimental groups had a high milkiness, providing the optimal energy piglets growth. More milkiness had sows II, III, IV group 65.03 kg; 60.88 kg 60,50 kg and superior to the control group I at 11,28; 7.13 and 6.75 kg respectively.

Weight at weaning nest at 28 days in all the experimental groups was higher in comparison with the control, during at 17.08 kg II, III to IV and 11.29 kg 11.02 kg respectively.

The weight of one piglet during this period in the experimental groups was significantly higher than in the control, group II at 0,94, III and IV of 0.67 to 0.63 kg.

Analysis of growth rates, development and preservation of piglets suckling period showed that in all groups conform to the requirements standard for specialized type.

Table 3: Indicators of growth and keeping pig - suckling

Indicator	Group			
	I	II	III	IV
At birth				
The number of pigs in the group goal	162	180	177	175
The live weight of 1 piglet, kg	1,45	1,60	1,47	1,52
At the age of 21 days				
The number of pigs in the group goal	155	173	167	165
The live weight of 1 piglet, kg	5,1	5,64	5,47	5,60
Absolute growth, kg	3,65	4,04	4,00	4,08
Average daily gain, g	174	192	190	194
The relative growth,%	251,72	252,50	272,11	268,42
Piglets keeping, %	97,5	96,1	94,4	94,3

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At the age of 28 days				
The number of pigs in the group goal	150	170	165	164
The live weight of 1 piglet, kg	6,90	7,84	7,57	7,53
Absolute growth, kg	1,80	2,20	2,10	1,93
Average daily gain, g	257	314	300	276
The relative growth,%	35,29	39,01	38,39	34,46
Piglets keeping, %				
During the suckling period				
Absolute growth, kg	5,45	6,24	6,10	6,01
Average daily gain, g	195	223	218	215
The relative growth,%	375,86	390,00	414,97	395,39
Piglets keeping, %	92,59	94,44	93,22	93,71

As a result, production testing found that pigs II, III and IV of the experimental groups were superior to peers in the control group 21 days in absolute weight gain by 0.39, 0.35 and 0.43 kg, on average daily gain of 18, 16 and 20 g, respectively, and 0.79 for the entire suckling period; 0.65 and 0.61 and 28, 25 and 20 g.

The growth rate of piglets experimental groups was higher than the control. The relative increase in body weight during the suckling period was greater in animals II, III and IV group at 14.14; 39.11 and 19.53 absolute percent than in the I group.

Indicator keeping in all groups of piglets was higher in the range of 92.59 to 94.44%. Highest keeping was in the test groups.

The economic efficiency of pig breeding is largely dependent on the ability of pigs to the fattening. Numerous studies have found that, when crossed, and hybridization pigs manifested heterosis effect, which manifests itself in increasing precocity and payment feed weight gain [4, 6].

Our results confirm the high productivity of hybrid pigs.

Table 4: Fattening quality of gilts

Indicator	Group			
	I	II	III	IV
Age at the beginning of fattening, days	86,20±0,40	86,73±0,38	86,40±0,37	86,33±0,36
Live weight at the beginning of fattening, kg	31,47±0,14	31,92±0,20	31,99±0,20	31,89±0,20
Live weight at the end of fattening, kg	100,50±0,40	100,90±0,34	100,37±0,30	100,05±0,27
The absolute increase in live weight for fattening period, kg	69,03±0,39	68,98±0,30	68,38±0,22	68,16±0,25
The duration of fattening, days	84,83±0,85	69,20±0,35	70,63±0,66	74,10±0,79
Average daily gain, g	814±10,74	997±6,48	968±9,85	920±10,76
Precocity, days	171,03±0,80	155,93±0,45	157,03±0,59	160,43±0,68
The cost of feed for 1 kg of live weight gain, kg	2,88	2,42	2,50	2,57

Analysis of the results of control-fed of experimental piglets up to 100 kg of body weight showed that the animals of group II (1/2 PM-1 + 1/4 LF + 1/4 LC) surpassed their peers in group I (PM -1) on average daily weight gain of fattening at 183 g (P>999), on the precocity of 15.1 days (P>999), to pay for feed weight gain 0.46 kg.

Piglets III, IV experimental groups (3/4 PM -1 + 1/8 LF + 1/8 LC) significantly superior to the control group on average daily gain at 154 and 106 g (P>999), on precocity at 14.0 and 10.6 days (P>999), for feed margin of 0.38 and 0.31 kg.

Young animals II, III group was also significantly superior in all parameters of fattening qualities gilts of group IV.

CONCLUSION

Thus, it can be concluded, in crosses manifested heterosis effect on reproductive and fattening qualities. The best results have been crossbred sows covered crossbred hogs. In fattening qualities, it is the most productive hybrids (1/2 PM-1 +1/4 LF +1/4 LC). This combination is recommended to create a new specialized type of pigs.

REFERENCES

[1] Pogodaev, V.A. Meat Productivity Pigs with Different Parts of Blood from Breeds CM–1 and landrace / V.A. Pogodaev, A.P. Marynich, S.V. Frolko, E.G. Mishvelov, and A.Y. Glushko // Research Journal of Pharmaceutical, Biological and Chemical Sciences. – July–August 2016. – RJPBC. – 7(4).– Page No. 1345-1348.

[2] Pogodaev, V.A. The Effectiveness of Growing Different Hybrids Turkeys / V.A. Pogodaev, S.V. Frolko, A.P. Marynich, , E.G. Mishvelov, and A.Y. Glushko // Research Journal of Pharmaceutical, Biological and Chemical Sciences. – July–August 2016. – RJPBC. – 7(4).– Page No. 1349-1352.

[3] Pogodaev, V.A. Humoral Factors of Resistance of the Organism Piglets of Different Genotypes / V.A. Pogodaev, H.N. Arov, L. G. Arova , E.G. Mishvelov, and I.V. Pogodaeva // Research Journal of Pharmaceutical, Biological and Chemical Sciences. – July–August 2016. – RJPBC. – 7(4).– Page No. 1353-1356.

[4] Ivan Fedorovich Gorlov, Anatolii Timofeevich Lebedev, Vitaly Yurievich Galkov, Alexander Viktorovich Orlyanskiy and Sergei Nikolaevich Shlykov. Res J Pharm Biol Chem Sci 2016;7(5):2518 -2522.

[5] Ivan Fedorovich Gorlov, Vladimir Ivanovich Trukhachev, Alexandr Vasil'evich Randelin, Marina Ivanovna Slozhenkina and Sergei Nikolaevich Shlykov. Res J Pharm Biol Chem Sci 2016;7(3):2323 -2329.

[6] Sergei Nikolaevich Shlykov, Ivan Fedorovich Gorlov, Viktor Ivanovich Guzenko, Anna Viktorovna Morgunova and Ruslan Saferbegovich Omarov. Res J Pharm Biol Chem Sci 2016;7(4):1714 -1717.

[7] Sergei Nikolaevich Shlykov, Ivan Fedorovich Gorlov, Viktor Ivanovich Guzenko, Vladimir Anatol'yevich Meshcheryakov and Ruslan Saferbegovich Omarov. Res J Pharm Biol Chem Sci 2016;7(4):1715 -1719.

[8] Sadovoy, V., Omarov, R., Shlykov, S., Shchedrina, T. Assessment compliance of qualitative food characteristics to standard requirements. Proceedings of 15th International Scientific Conference «Engineering For Rural Development 2016», May 25-27, 2016, Jelgava, Latvia, pp. 360-363.