ISSN: 0975-8585

Research Journal of Pharmaceutical, Biological and Chemical Sciences

Meat Productivity Pigs with Different Parts of Blood from Breeds CM–1 and LANDRACE.

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ABSTRACT

The research paper presents data of meat productivity the hybrid pigs, derived from meat breed Krasnodar fast-ripening type and Landrace French and Canadian selection. Hybrid pigs had more meat content and less fat. The index of meat content in the hybrids II, III, IV groups was more by 4.72, 3,25, or 1.26 %, and index of lean is higher by 24.18, 17.67, 9.77 % than I group. Hybrids II, III and IV of experimental group had more yield of meat by 72.26, 71.88, 71.12%.

Keywords:pig, breed SM-1, Landrace breed, slaughter yield, meat, fat, lean.

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ISSN: 0975-8585

INTRODUCTION

Improving efficiency of pig breeding is impossible without a clear understanding of the productive qualities domestic and foreign breeds, about the most effective combinations of them in obtaining hybrid progeny [6].

Many scientists [2, 5] have studied evaluation of combining ability in hybridization pigs. However, the nature of combining ability has not been studied fully [1, 3, 4]. Domestic breeds of pig are inferior to foreign breeds on meat quality, but favorably differ from foreign analogues by a strong Constitution and resistance to adverse environmental factors.

Relevant and promising is the development of new genotypes of pigs with high meat quality.The goal of this work was studying meat productivity of hybrid pigs derived from Krasnodar type of fast-ripening meat breed and Landrace French and Canadian selection.

MATERIALS AND METHODS

Experimental studies had carried out at pig breeding complex "Polyus" fromKarachay-Cherkess Republic.

For the experiment had been selected 30 purebred and 30 crossbred gilts, of which formed the control and experimental groups. Animals had selected by principle of analogues with a body weight of 135 – 140 kg. To selected gilts by scheme of crossing had selected the boars for mating. In the first group used purebred pigs of Krasnodar type CM-1. In the experimental groups used hybrids (50% CM-1 x 25% Landrace French Selection x 25% Landrace Canadian selection) (table 1.)

Table 1: ExperimentalDesign

Group	Thebreed, type, species		Thegenotypeofdescendants
	Sow	Boar	
I	CM-1, Krasnodartype	CM-1, Krasnodartype	Straightbred
II	50% CM1x25%LFx25%LC	50%CM-1x25%LFx25%LC	$\frac{1}{2}\text{CM}+\frac{1}{4}\text{LF}+\frac{1}{4}\text{LC}$
III	CM-1, Krasnodartype	50%CM-1x25%LFx25%LC	$\frac{3}{4}\text{CM}+\frac{1}{8}\text{LF}+\frac{1}{8}\text{LC}$
IV	50% CM1x25%LFx25%LC	CM-1, Krasnodartype	$\frac{3}{4}\text{CM}+\frac{1}{8}\text{LF}+\frac{1}{8}\text{LC}$

Experimental groups animals are had formed of piglets post weaning aged 28 days. Animals are had kept in identical conditions meeting hygienic requirements.

Control slaughter has carried out when the pigs reached 100 kg live weight. In each experimental group were killing 24 pigs, by 3 sow and 3 boar.

RESULTS AND DISCUSSION

Research has revealed that average daily gains for entire period fattening in young experimental groups amounted 920.0-997.0 g and were higher by compared to controls by 106.0-183.0 g (11.6-18.36 %).

Higher average daily gain of alive mass 997 g had observed in the experimental group II the rate significantly (P≤0.001), surpassed the gains of this period the feeding young animals of control group by 183 g (18.36 %) and III, IV experimental groups by 154 g (15.91%) and 106 g (11.52%), respectively.

With greater intensity are has grew crossbred animals. Best earliness of 155.93 day were animals II experimental group of gilts and III and IV group, it were respectively 157.03 and 160.43 day, which is less than in the control group at 15, 14 and 11 days.

The results after slaughter pigs revealed that on indicators of carcass qualities between the experimental

groups no statistically significant differences (table 2). It should been noted that hybrids II, III, IV group there is a tendency to increase carcass qualities.

Table 2: Results of experimental slaughter pig

Indicators	Group			
	I	II	III	IV
Slaughterliveweight, kg	99,95±0,15	100,08±0,11	100,02±0,23	100,05±0,17
Feet weight, kg	1,69±0,03	1,71±0,02	1,72±0,03	1,72±0,03
The mass of head, kg	4,52±0,05	4,41±0,05	4,32±0,03	4,40±0,05
The weight of internal fat, kg	1,80±0,04	1,74±0,04	1,75±0,03	1,76±0,04
Weightcarcass,kg	68,10±0,32	68,54±0,25	68,43±0,20	68,37±0,24
Slaughtermass, kg	76,11±0,33	76,40±0,35	76,22±0,37	76,25±0,30
Slaughteryield,%	76,15	76,34	76,20	76,21

Hybrid II, III, IV, groups, has greater slaughter weight and surpassed their peers in the control group for this indicator, 0.29, 0.11 and 0.14 kg.

Our research found significant differences in the indicators determining the quality of pig carcasses (table 3).

Table 3: Indicators of quality carcasses (n = 6)

Indicators	Group			
	I	II	III	IV
The length of half-carcasses, cm	97,00±0,37	99,30±0,43	98,90±0,32	98,10±044
The thickness of the bacon for 6-7 thoracic vertebrae, mm	22,33 ±0,49	20,12± 0,48	20,33±0,33	20,50 ±0,43
Area "muscle eye" cm^2	35,26±0,54	42,48±0,58	41,57±0,77	40,25±0,72
Posterior third of mass half-carcasses, kg	11,20±0,14	11,75±0,13	11,64±0,11	11,46±0,13

Hybrids II, III, IV groups had long side, superior similar purebred animals 2.30 (P≤0.001), 1.90 (P≤0.01), 1,10 cm (P>0.1).Hybrid animals (II, III, IV group) had more fat and thin inferior peers from control group in thickness of fat above 6-7 chest vertebras in of 2.21 (P≤0.05), 2.00 (P≤0.05) and 1.83 mm.

The area of "muscle eye" of gilts maturing meat breed was the lowest. Hybrids II, III, IV groups on this indicator surpassed the first group 7.57; 6.31 4.99 cm^2 (P≤0.001).

The rear third of the carcass was greater in pigs II, III, IV groups, by 0.55 (P≤0.05), 0.44 (P≤0.05) and 0.26 kg compared with those of the gilts of group I.

Our research found that the carcasses of pigs of experimental groups have significant differences in the ratio of muscle, fat and bone tissues (table. 4).

Table 4: Morphological composition of carcasses (n = 6)

Indicators	Group			
	I	II	III	IV
Weight chilled half-carcasses, kg	34,00±0,11	34,24±0,14	34,20±0,10	34,14±0,14
Contained in the half-carcasses:				
Meatkg	20,66±0,17	22,11±0,18	21,78±0,21	21,32±0,10
%	60,76	64,57	63,68	62,45
fat, kg	9,61±0,13	8,29±0,08	8,61±0,20	9,02±0,18
%	28,27	24,21	25,18	26,42
bone, kg	3,73±0,08	3,84±0,07	3,81±0,06	3,80±0,07
%	10,97	11,22	11,14	11,13
The amount of fat into	465	375	395	425
1 kg meat in carcass, g	5,54	5,76	5,72	5,61
Index flesh (meat/bones)	2,15	2,67	2,53	2,36

Hybrid pigs had a greater meat content and less fat. So, the pig II, III, IV groups surpassed the control group of animalsthe meat yield in the carcass, 1.45 (P≤0.001), Of 1.12 (P≤0.01), 0.66 (P < 0,01) kg relative output at 3.81; 2.92 and 1.69 %, respectively.

The pig of I group contained in the side more on 4.06; 3.17; 1.85% absolute fat than in the II, III, IV groups.

Hybrids II, III and IV experimental groups had kept in carcasses less than 90, 70 and 40 g of fat per 1kg of meat than peers in the control group.

The index of the meat content in the hybrids II, III, IV groups was more by 4.72; 3.25; 1.26 %, while the index of lean above, respectively 24.18; of 17.67: 9.77 % than in the I group.

Spent deboning the hindquarters of the carcasses confirmed a similar pattern.

Hybrids II,III and IV of experimental group had the largest yield of meat in hind ham 72.26, 71.88, 71.12%. Absolute meat percentage in the ham hybrids was more than 0.75 (P≤0.01), 0.63 (P≤0.05) and 0.41 kg, and relative output, respectively, at 3.15 m and 2.77, 2.,01 % than in the first control group.

The amount of fat in the ham was more of 3.35; and 2.21, 2.96% of gilts CM – 1 compared to hybrids II, III and IV groups.

The yield of bone in the rear leg of ham was about the same and amounted respectively to groups 10.18; to 10.38; 10.37; to 10.38 %.

To 1kg of meat in the hind ham hybrids II, III and IV groups was 60; 40 and 53 g less fat than in the I group.

CONCLUSION

Pigs with $\frac{1}{2}\mathrm{CM} + \frac{1}{4}\mathrm{LF} + \frac{1}{4}\mathrm{LC}$ possess the best meat qualities. Pigs are early maturing meat breed (SM–1) of Krasnodar type and yield hybrids with $\frac{3}{4}\mathrm{CM} + \frac{1}{8}\mathrm{LF} + \frac{1}{8}\mathrm{LC}$ in terms of meat production.

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