PRODUCTIVE CHARACTERISTICS OF PIGS LARGE WHITE BREED ODESA POPULATION DEPENDING ON THE BLOOD PARTICLE FOR FOREIGN GENOTYPES

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Pigs LWB regardless of their origin have high rates of reproductive, fattening, slaughter and meat qualities and the use of pigs foreign breeding improves fattening and meat qualities, indicating the feasibility of using genotypes LWB English, French selection when creating a plant type "Prychornomorskyi" with improved meat qualities in Odesa region.

Keywords: reproductive, fattening, meat qualities, pigs, Large White breed, plant type, blood particles, domestic and foreign selection.

Development and application of modern breeding techniques, taking into account current economic factors, are important scientific, industrial and economic task, its solution direct to improve the efficiency of pig breeding production [1,3-4].

Nowadays to improve production efficiency producers of pig breeding products are widely used animals of foreign genotypes. Pigs of foreign breeding ensure high profitability of pork production under condition of their appropriate level of feeding and keeping, but if we need to eliminate our state's permanent dependency on imported breeding material and inability to provide foreign breeding animals always appropriate conditions of feeding, maintenance, there is an actual question to improve own domestic breeds [6].

To be behind by quantitative indicators of meat quality and considering the home market demand, it was necessary to improve meat qualities of pigs Large White breed domestic selection by using animals not only the local genotypes selection but also foreign selection – creating the specialized lines, plant and interbreeding types, so to study the productive qualities of pigs plant type ULW-3 " Prychornomorskyi " is very important [2].

The aim of the study was to determine the complete productive characteristics of pigs LWB with improved meat qualities plant type" Prychornomorskyi ", which is created in conditions of Odesa region.

Materials and methods of researches. To study the productive qualities indicators it was formed six groups of animals LWB plant type" Prychornomorskyi ", which is in the process of creating with different blood particles for foreign selection. The general scheme of the experiment is shown in Table 1. Pig population for the researches was from the AC "Shabolat" B-Dnistrovskyi region Odesa oblast.

During the experiment feeding animals was conducted by zootechnical standards Vițu according to the age and live weight. Type of feeding - concentrate using feed of domestic production, procured protein components of industrial production. Microclimate and maintenance parameters were established according to the accepted sanitary and zootechnical standards.

Indicators of pigs reproductive, fattening, slaughter and meat qualities was determined by conventional methods [5].

Biometric processing data was performed by the method of variation statistics M.O.Plohynskym (1969) using personal computers and applied software packages MS OFFICE 2010 and STATISTICA V.5.5.

Results of researches. Pigs stock AC "Shabolat" was formed by animals in 70-80 years of the twentieth century from the best breeding farm USSR - "Nikonovske» Moscow Oblast for lines of Drachun, Delfin, Svat, Sopernyka, sows were taken from the genealogic families of Taiha, Reklama, Yasochka, Chorna Ptychka, Heran. At the other stages of selection boars were imported from Ukrainian breeding farm - "Progres", train.farm named after Trofimov in Odesa oblast (using meat genotypes of lines King, Nikol in the 80 years of the twentieth century.) "Stepove", "Vyrishalnyi", "Chutovo" Poltava oblast with genotypes from a combination of animal Estonian Large White breed selection and lines with increased meat qualities Vilhasa, Vesta, Alpine, Slavutych, Fasta and "Litynske",

"Ukraine" Vinytsia oblast. English freeding boars were also imported from the breeding farm "Stepnoi" Zaporizhska oblast.

1. The general scheme of the experiment

<table>
<tr><td rowspan="3">Animals groups</td><td rowspan="3">Blood particles for foreign</td><td colspan="6">Reproductive indicators</td></tr>
<tr><td colspan="2">At the farrowing</td><td colspan="4">On the 60th day</td></tr>
<tr><td>Multifetation, head</td><td>Large fecundity, kg</td><td>Number of heads</td><td>Nest’s weight, kg</td><td>Average weight of one head, kg</td><td>Maintenance , %</td></tr>
<tr><td>I</td><td>100%ULW</td><td colspan="6">Fattening features of young animals</td></tr>
<tr><td>II</td><td>6,25%ELW</td><td colspan="2" rowspan="2">Age for achieving a live weight of 100 kg, days</td><td colspan="2" rowspan="2">Average daily gain,g</td><td colspan="2" rowspan="2">Feed expenses for kg/1 kg gain</td></tr>
<tr><td>III</td><td>12,5%ELW</td></tr>
<tr><td>IV</td><td>25%ELW</td><td colspan="6">Slaughter and meat qualities of young pigs LWB different origin</td></tr>
<tr><td>V</td><td>25%FLW</td><td rowspan="3">The length of half-carcass,cm</td><td rowspan="3">Thickness of fat, mm</td><td rowspan="3">The weight of ham, kg</td><td rowspan="3">Area of “muscle eye”</td><td rowspan="3" colspan="2">Meat content, %</td></tr>
<tr><td>VI</td><td>50%FLW</td></tr>
<tr><td></td><td></td></tr>
</table>

Note: ULW – Ukrainian Large White;
ELW – English Large White;
FLW – French Large White.

Recent years pigs stock AC "Shabolat" was enlarged boars from the lines grown mostly from their own herd and from the breeding farms "Progres" and named after O. V.Trofimov (which are now extinct as breeding farms now). The gene pool of pigs AC "Shabolat" become the center of better breeding material domestic selection in Odesa region forming modern enriched gene pool with increased meat qualities and with significant genetic diversity and providing manifestation of interbreed heterosis in the selection of parents pairs for reproductive and feeding qualities of animals.

PR AC "Shabolat" is one of the basic enterprises creating a new selection achievement in Odesa region – the plant type in Large White breed - "Prychornomorskyi ", which is a part of ULW-3 with improved meat qualities. Since the 90s of last century, Large White breed genotypes with "particles of blood" in a cross of the English selection RIS from "Progres-Agro" Izmail region, Odesa oblast were delivered in "Shabolat". In addition, pigs stock is enriched by genes of pigs Large White breed French selection «France Hybrides» and «Nucleus» from "Dnistro-Hybrid" and LTD "Agroprime Holding" Odesa oblast.

The evaluation of reproductive features sows LWB plant type"Prychornomors-

kyi" which is in the process of creation, indicates the existence of certain differences between animals with different "blood particles" for foreign selection (group II-VI) compared with the first group of domestic breeding (Table 2) .

2. Reproductive indicators of pigs LWB different origin

Ani-mals groups	Reproductive indicators					
	At the farrowing		On the 60th day			
	Multifetation, head.	Large fecundity, kg	Number of heads	Nest's weight, kg	Average weight of one head, kg	Maintenance, %
I	11,74±0,23	1,34±0,02	9,47±0,13	168,78±2,51	17,93±0,19	83,04±1,29
II	11,57±0,24	1,39±0,02	9,63±0,18	179,88±3,21	18,68±0,23	84,70±1,60
III	11,19±0,45	1,38±0,02	9,13±0,25	170,13±5,18	18,64±0,34	84,94±2,98
IV	11,11±0,42	1,41±0,02	9,55±0,34	178,11±7,94	18,65±0,59	86,78±3,86
V	11,44±0,37	1,39±0,03	9,73±0,29	184,08±5,79	18,92±0,34	86,19±2,15
VI	12,22±0,55	1,42±0,04	9,87±0,31	187,38±5,56	19,10±0,40	83,60±2,72

Note: * *- P<0,05;* ** *- P<0,01;* *** *- P<0,001*

Sows domestic selection had an advantage for multifetation (11.74 heads) compared with different "particles of blood" sows for foreign selection II-V group (11,11-11,57 heads), but VI experimental group had the highest indicator of multifetation (12.22 heads). As for the other parameters - large fecundity and at weaning (number of piglets, nest's weight, the average live weight of 1 piglet and piglets survival) sows of II-VI experimental groups had an advantages over the sows of control ones. Sows of III experimental group were an exception which had the lower indicator by the number of piglets at weaning.

Analysis of fattening features young pigs of various origin (table. 3) showed that due to the increased average daily gain in young pigs II-VI experimental groups, the age of achieving a live weight of 100 kg and the cost of feed per 1 kg gain were smaller..

3. Fattening indicators of young pigs LWB different origin (n=12)

1.

Animals groups	Age for achieving a live weight of 100 kg, days	Average daily gain ,g	Feed expenses for kg/1 kg gain
I	184,58±2,04	664,92±11,00	3,32±0,03
II	177,50±1,88*	693,08±11,49	3,19±0,04*
III	177,16±1,96*	696,42±11,63	3,15±0,03**
IV	176,91±1,92*	701,00±11,84*	3,09±0,03***

V	174,18±2,07**	712,17±12,13**	3,07±0,04***
VI	173,09±2,39***	717,83±12,33**	3,03±0,03***

*Note: * - P<0,05; ** - P<0,01; *** - P<0,001*

Young animals II-VI experimental groups reached live weight of 100 kg on 7,08-11,49 days or 3,84-6,23% earlier than the young animals I control group domestic selection by higher values of average daily gain 28, 16-52,91 g or 4,23-7,95%. For the food expenses preference to 0,13-0,29 kg or 3,92-8,74 % was also on the side of pigs II-VI experimental groups against the young animals of control group domestic selection. Analysis of slaughter and meat qualities of young pigs various origins (table. 4) showed that "blood's inflow " LWB foreign selection did not effect on the length of half carcass as the difference between the groups is not significant, but the indicators of ham thickness above 6-7 breast ribs, ham weight, area of "muscle eye", meat content in the carcass were significantly better (desirable, meet the requirements of pigs modern meat genotypes) in animals II-VI experimental groups.

4. Slaughter and meat qualities of young pigs LWB different origin (n=3)

Animals groups	The length of half-carcass,cm	Thickness of fat above 6-7 br.rib, mm	The weight of ham, kg	Area of "muscle eye"	Meat content, %
I	95,66±0,33	27,33±1,45	10,60±0,30	34,67±1,40	59,00±1,15
II	96,33±0,33	25,33±0,33	11,16±0,16	37,33±0,88	60,00±0,57
III	96,66±0,33	23,66±0,88	11,66±0,33	38,33±1,85	60,67±0,88
IV	96,00±0,57	22,00±1,52	11,83±0,16*	39,00±1,73	61,00±0,58
V	96,66±0,33	20,66±1,85*	12,10±0,20*	44,67±1,45**	61,67±0,88
VI	96,66±0,66	19,33±1,76*	12,23±0,23*	45,66±1,20**	62,00±0,57

*Notes: * - P<0,05; ** - P<0,01; *** - P<0,001*

The complete researches found a high level of reproductive, fattening and meat qualities of pigs LWB with improved meat qualities Odesa population plant type"Prychornomorskyi" which is in the process of creation.

Conclusions and prospects for further researches.

1. In general, pigs LWB regardless of their origin have high rates of reproductive, fattening, slaughter and meat qualities.

2. The use of foreign breeding pigs improves fattening and meat qualities, indicating the feasibility of using genotypes LWB English, French selection when

creating a plant type"Prychornomorskyi" with improved meat qualities, which is creating in Odesa region.

3. The prospect for further research is to consolidate this plant type and to complete and submit corresponding documents for recognition new selection achievement Odesa region on the state level.

List of references:

1. Ahapova Ye.M. The efficiency of breeding pigs plant line for fattening and meat qualities on the breeding farm “Progres” Izmail region, Odesa oblast/ Ye.M. Ahapova // reports theses of scientific conference “The ways of pig breeding improvement and increasing products quality ”.- Odesa, 1982. – p.7-8.
2. Berezovskyi M.D. Creation of interbreeding pigs plant type in Large White breed with improved meat quality/ M.D. Berezovskyi , L.P. Hrishina, A.A. Hetia, O.A. Manko, P.A. Vaschenko// Pig breeding.- Poltava, 2009. – Adit.57. – p.15-25.
3. Hetia A.A. The organization of selection process in modern pig breeding/A.A. Hetia.– Poltava: Poltava liter., 2009. – 192p.
4. Kovalenko V.P. Modern conception of increasing pigs reproductive ability/ V.P. Kovalenko , V.H.Pelyh// В.Г. Пелих// Journal of Poltava State Academy.– 2000. – №2. – p. 35-38.
5. Modern researches methods in pig breeding/ V.P.Rybalko, M.D. Berezovskyi, H.A.Bohdanov, V.F.Kovalenko and others –Poltava: PI, 2005. – 228 p.
6. Topiha V.S. Using foreign gene pool of pigs in the condition of Ukrainian South region/ V.S.Topiha, S.V. Hryhoriev// Scientific journal “Askaniya Nova”. – 2013. – Adit.6. – p. 236 - 244.

Р.Л. Сусол.

Продуктивные характеристики свиней крупной белой породы Одесской популяции в зависимости от доли крови зарубежной селекции.

Свиньи КБП независимо от своего происхождения характеризовались высокими показателями репродуктивных, откормочных, убойных, мясных качеств, а использование свиней зарубежной селекции способствует

определенному улучшению откормочных и мясных качеств, что свидетельствует о целесообразности использования генотипов КБП английской, французской селекции при создании заводского типа «Причерноморский» с улучшенными мясными качествами в Одесском регионе.

Репродуктивные, откормочные, мясные качества, свинки, крупная белая порода, заводской тип, доли крови, отечественная, зарубежная селекция.