SOME RESULTS OF BREEDING PIG HYBRIDS WITH PARTICIPATION OF VP (LOCAL IMPROVED BREED, ISSUED FROM BM=LARGE WHITE X V=LOCAL BREED) AS A PATERNAL BREED

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Abstract

Breed improvement of pigs is a major way to increase the economic efficiency of pig production in the near future. Different ways are now available to achieve this goal; among them, the valorisation of the exceptional reproductive abilities of some pig breeds is likely to provide the largest improvement in sow annual productivity. The fattening and carcass traits of two and three hybrids on the basis of VP as a paternal breed were studied. The characteristics of the following four groups were compared: BM X VP; L X VP; (BM X L) X VP; (L X BM) X VP. The data showed good genetic growing abilities of the pig hybrids studied. In this respect the BM X VP combination exceeds the other showing best-feed conversion ratio. VP breed in the position of a paternal breed contributed to higher carcass trait values of studied hybrids.

Key words: pigs, growing, traits, breed, carcass

INTRODUCTION

Use of adequate schemes of crossbreeding is probably to provide an increase by about 30% of efficiency of pig production systems (Sellier, 1982 a). Nevertheless, the chose of the best ones is not a simple process. In fact, although relatively limited numbers of pig breeds, which are managed in high input production system, the range of potential combinations is very large and every experimental comparison between them is impossible. Therefore, different analytic models have been applied in order to predict and compare the different crossbreeding schemes in relation to their efficiency. These schemes are based on the knowing a limited numbers of parameters that might be computed by small scale experiments. Indicators of some traits increased by 6-8 % due to heterosis in crossbreeding between two breeds (A x B). When crossbreeding (AB x C) added value of heterosis is 2-4%. So, use of 3-4 breeds enhances hybrid power when lines which are chosen for crossbreeding characterized by high genetic potential. Questions arisen by benefits derived from crossbreeding and hybridization of pigs have been and will remain evident ones; therefore they present interests in nowadays. These studies also belong to authors such us: Molenat 1987, Dziagis and Klimas, 1992, whose objective has been to obtain F1 progenies by means of respective crossbreeding BM x L and L x BM, as well as the introduction of a new breed, where, in our case, the improved local breed was used (VP = BM x V).

MATERIAL AND METHOD

4 groups of pigs set up, each of 12 heads. Schemes of crossbreeding are as follows:

- first group: BM x VP
- second group: L x VP
- third group: (BM x L) x VP
- fourth group: (L x BM) x VP

four groups were studied to :

a- growth indices: live weight at the beginning of growth, weaning live weight, finishing live weight, average daily gain, feed conversion (feed : gain ratio)

b- Carcass indices: dressing, %, maximum carcass length, cm; minimum carcass length, cm; fat thickness M.L. Dorsis, mm.

δ and VC (coefficient of variation) were computed to each of indices. Values for each indicator were also compared amongst groups in order to show the supremacy of each group.

Pigs were randomly chosen according to analogy principle in relating to age, live weight, and sex. Live weight of pigs was 39 kg according to cyclic development (herd cyclorama). Pig groups were observed for 93 days. Pigs stayed at the same stable, (6 pigs for each cage). Hence, one group of 12 heads = two cages x 6 heads/ cage. Some indices were studies for each crossbreeding. The data were statistically processed.

RESULTS AND DISCUSSION

The data shown in Tab. No. 1 give a whole idea of study.

Table 1. Fattening traits

Indicators	Combinations of realized							
	BM X VP		L X VP		(BM X L) X VP		(L X BM) X VP	
	M±m	C	M±m	C	M±m	C	M±m	C
Live weight at beginning of growth, kg	39.80±0.310	2.7	39.50±0.370	3.2	39.58±0.325	2.8	39.50±0.594	3.2
Live weight at the end of growth, kg	111.50±1.435a	4.5	103.00±1.403a	4.7	106.33±1.630	5.3	105.83±2.08	6.8
Average daily gain, g.	772±0.017ab	7.5	687±0.015b	7.7	721±0.018	8.8	708±0.021a	10
Feed consumption rate, kg.	3.321		3.613		3.480		3.524	

*P< 0.01

As seen by table, crossbreeding BM x VP have supremacy (expressed in absolute figures compared to other respective ones. Differences at all other variants are almost equal. This phenomenon is also confirmed by statistical process of data, which turns out that the differences are not statistically proved. While, in case of variant BM x VP, differences are statistically proved (P<0.01).

The same phenomenon seems to be in relation to feed conversion (feed: gain ratio) which, in case of variant BM x VP figures are 3.321. This variant compared to other variants is about 8.7 % lower.

Data shown in Tab. No.2 aim to give a more complete idea for the influence of crossbreeding on quantitative and qualitative indicators of carcass, which constitutes the core of production of this specie.

The data given in Tab. No.2 show a supremacy of crossbreeding (LxBM) x VP. This group has higher dressing (75.6%) (P<0.05).

The same phenomenon is expressed in other indicators of carcass quality such us: rib eye muscle area, (41 cm^2) (Lx BM) x VP (P<0.05).

Table 2. Carcass traits

Indicators	*Combinations of realized*							
	BM X VP		L X VP		(BM X L) X VP		(L X BM) X VP	
	M±m	C	M±m	C	M±m	C	M±m	C
Dressing, %	74.15±1.59	6.1	72.93±1.2	4.7	72.44±1.02a	4.0	75.62±0.95a	3.5
Maximum carcass length, cm	97.62±0.90	2.6	98.40±1.31	3.7	98.75±1.59	4.5	98.25±0.72	2.1
Minimum carcass length, cm	78.87±0.67	2.4	80.12±1.20	4.2	80.62±1.66	5.8	79.50±0.73	2.6
Fat thickness (M. L. dorsi, mm)	28.00±1.97	19.9	26.25±2.11	22.6	26.25±1.45	15.6	27.62±1.12	11.2
Fat thickness in three measurements of back , mm	32.67±1.84	15.9	31.76±2.03	18.1	30.25±1.36	12.8	30.91±1.33	12.2
Ribeye muscle area cm^2.	34.16±1.41b	11.6	33.67±1.39c	15.0	35.27±1.52a	12.2	41.06±1.94 abc	13.4
Ham, kg.	10.08±0.29	8.1	9.67±0.23	6.8	9.54±0.16	4.9	9.78±0.18	5.2
Shouldres, kg.	5.11±0.16	8.8	4.63±0.14	8.6	5.01±0.19	10.8	5.09±0.16	9.1

*P<0.05

CONCLUSIONS

- Advantages of industrial crossbreeding (one or more combinations) create premises of increasing pork production not only in the dynamic of live weight gain but also for other quantitative and qualitative indicators
- Crossbreeding (BM x VP) gives higher daily gain compared to the other ones
- Crossbreeding (L x BM) x VP gives a larger area of rib eye muscle compared to the other ones
- Effects of crossbreeding are really shown, where a balanced feed ration is supplied with according to nutrient requirements of pigs.
- BM must be the basic breed to produce female lines

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