

RESEARCH ON PARAMETERS OF GROWTH AND VALUE OF FEED INTENDED FOR THE PIC HYBRIDS SLAUGHTER

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Abstract

Through this paper, we proposed to establish the production performances of breeder PIC lines exploited within a top unit in Moldova in swine husbandry - S.C. SUINPROD S.A. ROMAN. In order to assess the production performances, there have been studied individuals resulted from crossings between PIC 402 and PIC 408 boars with the Camborough sow, following the standard working protocol in the unit.

The body weight values, achieved by both piglets groups issued from crossings, indicated a better performance in the PIC 402 x Camborough descendants, compared with the PIC 408 x Camborough ones, meaning + 2 % overall the analysed period, being in accordance with the data presented by the PIC company and by the scientific references as well.

The values concerning the average daily weight gains indicated better results in PIC 402 x Camborough piglets (611 g), compared to those achieved by PIC 408 x Camborough descendants (600g), meaning a difference of 1,8%.

Feed conversion ratio (kg feed / kg weight gain) reached, during the entire experimental period, 2.61 kg in PIC 402 x Camborough group and 2.7 kg in PIC 408 x Camborough groups, the values being comprised within the limits specified by the PIC and other literature specifications.

The achieved results indicated best performance at PIC 402xCamborough descendants, being in accordance with the scientific references.

Key words: swine, PIC, body weight, weight gain

INTRODUCTION

Efficiency *suidae* growth depends to the greatest extent of the genetic value of the pigs used for breeding, of the most advanced feeding and maintenance technologies, being able to highlight the existing genetic potential. To this end we proposed to determine the production performances of PIC hybrids, exploited in an elite unit of Moldova, respectively S.C. SUINPROD S.A. ROMAN.

MATERIAL AND METHOD

Research has been conducted on individuals resulting from crossbreeding PIC boars between 402 and PIC 408 with Camborough sow, according to the protocol in the unit.

PIC offsprings obtained from crossing the lines of PIC 402 and 408 with Camborough sow, were studied comments on productive performance and they were divided into 2 experimental groups, each groups is composed of 40 piglets (table 1).

Table 1
Organizing experiences

Group	Crossing type	Individuals	Economical designation
L 1	PIC 402 x Camborough	40	slaughter
L 2	PIC 408 x Camborough	40	slaughter

RESULTS AND DISCUSSION

1. Dynamics of body weight

As a general reference on the evolution of body weight of the descendants in experimental groups can be argued that the issues resulting from experimental research are close to those recorded in literature (table 2).

Analyzing the data presented in tab. 2 it could be observed that during experiment piglets weight in both groups was close, differences not exceeding 110 g/ groups at the end of the experiment there have been differences of 2 kg weight groups.

Table 2
 Average body weight in descendants PIC

Group	Flock site (Individuals)	Average weigh (kg) at the age of:				
		1 day	25 day	85 day	120 day	Slaughter (162 day)
L 1	40	1,2± 2,8	7,0± 5,9	32± 5,46	60,8± 5,5	99,6± 6,92
L 2	40	1,09± 3,3	6,8± 3,8	31,2± 4,9	59,6± 4,8	97,8± 6,37
Fisher test		n.s.	n.s.	n.s.	s	s

An analysis of the data presented in table 2 shall certify the results of positive descendants PIC 402 x Camborough (the group L1) to 408 x Camborough PIC (the group L2) regardless of the age at which the determination of body weight.

On the first day of life, the descendants of lot L1 recording an average weight of 1.2 kilograms (100%) of the group L2 recorded an average weight of 1.09 kilograms (90.83%) so a difference of about 10%.

At weaning (25 days), the 40 progeny of lot L1 recording an average weight of 7 kg (100%) the piglets in L2 group recorded an average weight of 6.8 kilograms (97.06%), meaning a difference of 3 %.

At the age of 120 days of descendants, the difference between the groups, maintained the values having a slight decrease. Thus at the individuals from group L1 the average body weight was 60.8 kilograms (100%) compared with that of L2 group of 59.6 kilograms (98.0%).

Regarding the age at slaughter, this reached 162 days, when descendants of L1 group achieved an average weight of 99.6 kilograms (100%) and those of L2 group

weighted was 97.8 kilograms (98.19%) the difference between groups was 1.8%.

Between experimental groups were statistically insignificant differences, recorded in the first 3 periods of control and statistically significant differences in the last two periods.

Average weight at weaning from the two group was in concordance with the data presented in literature (weaning weight of 6,3-7,5 kg) [1, 6, 8, 9, 10, 11]. Also, the time needed to attain slaughter weight was close to the performance of highly productive hybrids (aged 150-165 days at slaughter) [3, 5, 9, 10, 11].

2. Results concerning average daily weight gain (A.V.G.)

The average daily weight gain was observed during distinct periods, from birth until slaughter, the results showing ascendant trend of this indicator, irrespective of the experimental group or related to the rearing periods. Throughout the experimental period, average daily gain was different periods and experimental groups (table 3).

Table 3
 Results an average daily gain of progeny

Group	Flock site (Individuals)	Average daily gain (g) at the age of:			
		1 – 7 days	8 - 14 days	15 - 25 days	A.V.G. during nursery period
L 1	40	183± 2,2	228± 3,6	255± 4,40	241± 6,72
L 2	40	179± 1,5	221± 3,9	245± 5,20	237± 7,26
Fisher test		n.s.	s	d.s	s

From the data presented in table 3, is observed that during nursery period, average daily gain had upward trend, in both groups of piglets, the highest average value (241g) being registered in L1 group vs. L2, where the average was 237g. the increased gain in the second and third period of nursery may be explained by the additional consumption of feed (from the age of 8 days) and by the

digestive system development and equipment of the enzyme piglets. Between groups, insignificant statistical differences occurred between 1 - 7 days, but the differences became significant in other periods.

Results achieved on the average daily gain from the two progeny groups during growth and fattening periods are presented in table 4.

Table 4
 Results on average daily gain during growing and fattening periods

Group	Flock site (Individuals)	Average daily gain (g) at the age of:			
		25 – 85 days	85 - 120 days	120 - 162 days	A.V.G. during breeding period
L 1	40	417± 6,21	822± 7,18	923± 8,2	718± 5,81
L 2	40	406± 5,21	811± 6,11	909± 8,3	705± 6,44
Fisher test		s	s	s	s

From the data presented in table 4 following aspects could be drawn:

- In the age of 25-85 days, the highest average daily gain was observed in the descendants of L1 group (PIC Camborough x 402 - 417g), the difference from group L2 (PIC Camborough x 408 - 406 g) being of + 2.7% (11g);
- Between 85-120 days of age, the average daily gain was the same, the difference being of 11 g in favor of group L1;
- Between 120-162 days of age, average daily gain was best at the L1 descendants (402 x Camborough PIC), the difference from group L2 (PIC Camborough x 408) being of + 1.54% (14 g).

Statistical differences had significant degree throughout the growth and fattening periods.

For the average daily gain from birth until slaughter, the results fall within the same line as in the previous presentation, the group L1 registering the highest value of 611 g, compared to 600 g per L2 group.

Analyzing the values presented in table 4 could be considered that they fit to the data presented in the literature on hybrids of high productivity [1, 3, 4, 5, 6, 7].

3. Results concerning feed conversion

The correlation between growing up and feed conversion it is well known, considering that in animals with high growth rate, the feed intake is lower. In order to provide better conditions to the progeny, to be able to achieve their genetic potential, their feeding has been done in accordance with the PIC recommendations for growing and fattening periods. Throughout the rearing and fattening, feeding was done ad libitum, feeding stuffs being used as flour, recipes respecting company rules recommended by PIC.

Table 5 and fig. 1 are shown the quantities of feed consumed by the two groups of descendants PIC and the specific made during growth and fattening.

Table 5
 Average feed consumption and ratio conversion to the PIC descendants

Specification	The age of descendants (days)								TOTAL		Fisher Test
	1-25		25-85		85-120		120-162		(1 – 162 days)		
	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2	
Feed (kg)	7	7.1	48	48	75	77	130	132	260	264.1	s
Average gain (kg)	5.8	5.71	25	24.4	28.8	28.4	38.8	38.2	99.6	97.8	s
F.C.R. (kg)	1.20	1.24	1.92	1.96	2.60	2.71	3.35	3.45	2.61	2.70	s

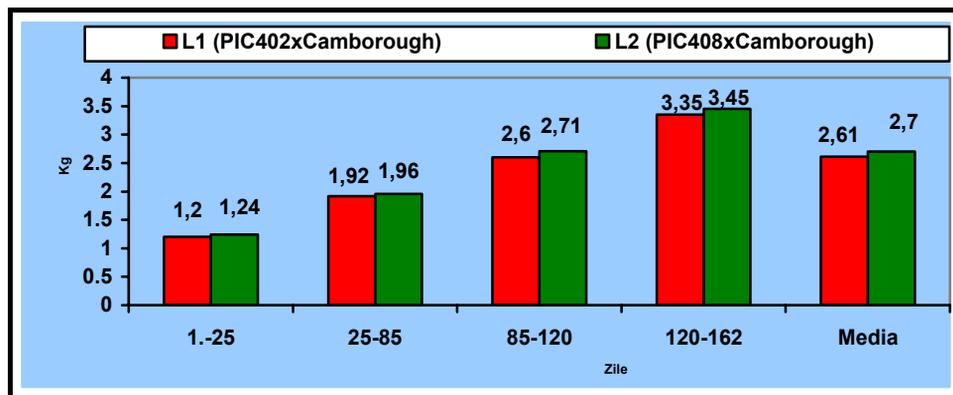


Fig. 1. Feed conversion rate at the PIC progeny

Analyzing the data recorded in table 5 we can conclude that, during the entire experimental period, the L1 group progeny (402 x Camborough PIC) had the lowest amount of feed consumed (260 kg) compared with the L2 group (408 x Camborough PIC) that recorded 264.1 kilograms of feed consumption, meaning 1.5% higher.

Concerning the feed conversion rate, the trend was the same, L1 group having a conversion of 2.61 kg/kg gain and L2 group a consumption of 2.7kg/kg growth. Data obtained by both groups are in accordance with the company PIC Romania and literature [2, 4, 8, 9, 10, 11].

Statistically significant differences occurred between groups for all analyzed parameters (feed intake, weight gain, feed conversion).

CONCLUSIONS

1. Values on body weight, achieved by both piglets groups indicate a difference between the PIC 402 x Camborough descendants and PIC 408 x Camborough progeny, meaning around 2% throughout the period, being meanwhile in accordance with the data presented by PIC Company and literature;

2. Results concerning the average daily gain also indicate better performances in PIC 402 x Camborough (611 g) progeny, compared to the PIC 408 x Camborough (600g), issuing a difference of around 11g (1.8%);

3. The feed conversion ratio, calculated throughout the whole experimental period, reached 2.61 kg in group PIC 402 x Camborough and 2.7 kg in group PIC 402 x

Camborough, values in accordance with PIC company and literature specifications;

4. Very well production results recommend the usage of ring these hybrids, due to their outstanding growing performance and to their morpho-productive type, specialized for meat production.

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