

COMPARATIVE PRE-WEANING PERFORMANCE OF 75% LARGE WHITE YORKSHIRE CROSSBRED PIGS OF FIFTH AND SIXTH FILIAL GENERATION

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Abstract: The overall birth weight of fifth and sixth filial generations of 75% Large White Yorkshire crossbred were 1.14 ± 0.02 and 1.22 ± 0.02 kg respectively. The birth weight of male and female pigs of fifth generations were 1.15 ± 0.02 and 1.13 ± 0.02 kg and sixth generations were 1.24 ± 0.03 and 1.19 ± 0.02 kg respectively. The weaning weight of overall, male and female piglets at 42 days of age for the fifth were 7.52 ± 0.15 , 7.34 ± 0.19 and 7.72 ± 0.24 kg and sixth generation were 8.25 ± 0.20 kg, 8.08 ± 0.28 kg and 8.36 ± 0.31 kg, respectively. The pre-weaning weight gain of overall, male and female piglets up to 42 days of age for the fifth generation were 151.53 ± 3.43 , 147.58 ± 4.39 and 156.89 ± 5.47 g/day and sixth generation were 169.08 ± 4.56 , 164.85 ± 6.01 and 173.58 ± 6.91 g/day, respectively. There was 7.02%, 9.71 % and 11.58% improvement in overall birth weight, weaning weight and pre-weaning growth rate of sixth generation compared to fifth generation. Sex had significant effect on weaning weight and pre-weaning weight gain but had no influence on birth weight of piglets.

Keywords: Crossbred pigs, birth weight, weaning weight, genetic improvement.

Introduction

Pigs can effectively convert agricultural by products, kitchen and hotel waste into good quality meat. Pigs yield higher dressing percentage compared to other meat animals. In India pigs are reared by economically weaker section of the people. Most of these local pigs have poor reproductive and productive performance. Crossing of local pigs with exotic breeds will improve the reproductive and productive performance of pigs and thereby the economic status of the farmer can be improved. Hence the present study is undertaken to compare the pre-weaning performance of fifth and sixth filial generation of 75% Large White Yorkshire pigs.

Materials and Methods

Large White Yorkshire boars were mated with desi gilts/sows to produce 50% Large White Yorkshire crossbred pigs which were again backcrossed with Large White Yorkshire boars to

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produce 75% Large White Yorkshire crossbred pigs. In 75% Large White Yorkshire crossbred pigs inter se mating was carried out and produced fifth and sixth generation pigs. The pigs were maintained under semi-intensive system and were fed with concentrates. The piglets were fed with creep feed from second week of age until weaning (42 days). At day old age iron dextran was administered @100mg per piglet to prevent piglet anaemia. Birth weight and weaning weight were recorded using digital weighing balance. The data collected were subjected to statistical analyses (Snedecor and Cochran, 1994) for interpretation.

Result and Discussion

The overall least squares mean birth weights of fifth and sixth generations of 75% Large White Yorkshire crossbred were 1.14 ± 0.02 and 1.22 ± 0.02 kg respectively (Table 1). The mean birth weight of male and female piglet for fifth filial generation were 1.15 ± 0.02 and 1.13 ± 0.02 kg and for sixth filial generation were 1.24 ± 0.03 and 1.19 ± 0.02 kg (Table 2). The overall birth weight was significantly ($P < 0.01$) high in sixth filial generation compared to fifth filial generation. There was 7.02% improvement in overall birth weight. Sex had no significant effect on birth weight of piglets. Similarly, Cauveri *et al.* (2009) reported the overall birth weight was 1.23 ± 0.02 kg in LWY crossbred pigs. They further reported that the birth weight in male was 1.18 ± 0.02 kg and in female piglet was 1.13 ± 0.02 kg and the effect of sex was not significant on live weight at birth.

In contrary to the present findings Chhabra *et al.* (1989), Mishra *et al.* (1990) and Sai Prasanna *et al.* (2010) reported that sex of the piglets had significant effect on birth weight.

The overall least squares mean weaning weights at 42 days of age of fifth and sixth generations of 75% Large White Yorkshire crossbred were 7.52 ± 0.15 and 8.25 ± 0.21 kg, respectively (Table 1). The overall weaning weight was significantly ($P < 0.01$) high in sixth filial generation compared to fifth filial generation. There was 9.71 % improvement in overall weaning weight in sixth filial generation compared to fifth filial generation.

Table 1. Overall pre-weaning performance of 75% Large White Yorkshire crossbred pigs of fifth and sixth filial generation

Sl. No	Traits / Characters	Fifth generations	Sixth generations
1	Birth weight ^{NS} (kg)	1.14 ± 0.02 (182)	1.22 ± 0.02 (137)
2	Weaning weight -42 days** (kg)	$7.52^a \pm 0.15$ (170)	$8.25^b \pm 0.21$ (131)
3	Pre-weaning growth rate** (g/day)	$151.53^a \pm 3.43$ (170)	$169.08^b \pm 4.56$ (128)

^{NS} - Not significant; **- Means bearing different superscript within a row differ significantly ($P < 0.01$). Figures in parentheses indicate the number of observations

Table 2. Influence of sex on pre-weaning performance of 75% Large White Yorkshire crossbred pigs

Traits / Characters	Sex	Fifth generations	Sixth generations
Birth weight ^{NS} (kg)	Male	1.15 ± 0.02 (104)	1.24 ± 0.03 (70)
	Female	1.13 ± 0.02 (78)	1.19 ± 0.02 (67)
Weaning weight -42 days** (kg)	Male	7.34 ^a ± 0.19 (98)	8.08 ^a ± 0.28 (67)
	Female	7.72 ^b ± 0.24 (72)	8.36 ^b ± 0.31 (64)
Pre-weaning growth rate** (g/day)	Male	147.58 ^a ± 4.39 (98)	164.85 ^a ± 6.01 (66)
	Female	156.89 ^b ± 5.47 (72)	173.58 ^b ± 6.91 (62)

^{NS} - Not significant; ** - Means bearing different superscript within a column differ significantly (P<0.01). Figures in parentheses indicate the number of observations

Sharma *et al.* (1990) reported weaning weight of 7.40 ± 0.12 kg in Large White Yorkshire pigs and Cauveri *et al.* (2009) reported weaning weight of 6.78 ± 0.16 kg at 42 days of age in 75% LWY crossbred pigs which were lower compared to our present study.

The overall least squares mean pre-weaning daily weight gain of fifth and sixth generations of 75% Large White Yorkshire crossbred were 151.53 ± 3.43 and 169.08 ± 4.56 g/day, respectively (Table 1). There was 11.58% significant (P<0.01) improvement in overall pre-weaning growth rate of sixth generation compared to fifth generation. Gnana Prakash *et al.* (2008) reported overall least-squares mean daily gain during 0-8 weeks of 0.153 ± 0.001 kg in LWY crossbred pigs which was in agreement with the present findings.

In both fifth and sixth filial generations the weaning weight and average daily weight gain of female piglets were significantly (P<0.01) higher than male (Table 2). In contrary Cauveri *et al.* (2009) reported sex had no significant effect on weaning weight of crossbred pigs.

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References

- [1] Cauveri, D., T. Sivakumar and P. Devendran, 2009. Prewaning body weights in Large White Yorkshire crosses. *Indian J. Anim. Res.*, **43** (2):130-132.
- [2] Chhabra, A.K., Bhatia, S.S. and Sharma, N.K. 1989. Effect of non-genetic factors on individual traits in Large White Yorkshire pigs. *Indian J. Anim. Sci.*, **59**(2): 300- 302.
- [3] Gnana Prakash, M., A Ravi, B Punya Kumari and D. Srinivasa Rao, 2008. Reproductive and productive performance of crossbred pigs. *Indian Journal of Animal Sciences*, **78** (11): 1291-97.

- [4] Mishra, R.R., S. Prasad and K.Lal,1990. A study on variation in birth weight of Large White Yorkshire piglets under farm conditions. *Indian Vet. J.*, **67(7)**: 619-622.
- [5] Sai Prasanna, J., M. Gnana Prakash, B. Ramesh Gupta M. Mahender and D. Srinivasa Rao, 2010. Factors affecting pre-weaning body weights and growth rates in crossbred pigs. *Indian J. Anim. Res.*, **44 (3)**: 157 – 167.
- [6] Sharma, B.D., C.B. Dubey and S.K. Singh, 1990. A comparison study of growth in purebred and crossbred pigs. *Indian J. Anim. Sci.*, **60 (4)**: 492-495.
- [7] Snedecor, G.W. and Cochran, W.G. (1994)...Statistical Methods, Iowa State University Press, USA.