

EFFECT OF AGE AT WEANING ON GROWTH PERFORMANCE OF LARGE WHITE YORKSHIRE

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ABSTRACT

A trial was conducted to assess the effect of age at weaning on growth performance of large white Yorkshire piglets. A total of 107 piglets weaned at 28 days and 78 piglets weaned at 56 days were considered for this trial. The study revealed that the weaning weight of piglets during 28th day and 56th days were 8.73 ± 1.32 and 14.77 ± 0.77 , Kg. respectively and varied highly significant ($P \leq 0.01$) among them. The weight at 6 months of age for the 28-day and 56 day weaning groups were 55.58 ± 1.13 and 53.13 ± 1.05 , Kg. respectively, which did not vary significantly, in spite of numerical superiority for 28-day weaned piglets. The livability was calculated to be 96.3% for 28th day weaning group and 100% for the 56th day weaning group. The daily weight gain for the 28th day and 56th days weaning group were 0.32 ± 0.007 and 0.33 ± 0.009 respectively and did not vary significantly. It was concluded that weaning at 28 days has no significant effect on the marketing weight of piglets.

INTRODUCTION

Optimization of pork production system requires a knowledge of between and within pig variations in body weight. Variation in growth of pig costs producers a significant economic loss. Controlling weight variation is a constant challenge for swine producers. The key is recognizing the causes of variation and using strategies to minimize the variation in weight. It has been previously reported that lighter pigs at weaning had slower post-weaning growth rates and thus required a greater number of days to reach a common slaughter weight (Wolter *et al.*, 2002). Piglet birth weight has a significant effect on weaning weight. As with birth weight, there is also a relationship of weaning weight to subsequent growth performance. Pigs weighing less than 5Kgs. at weaning (21 days) require 12 additional days to reach market weight when compared to pigs weighing greater than

7.0Kgs (Azain *et al.*, 1996). The objective of this study was to compare the performance of Large White Yorkshire pigs until marketing when weaned at different ages.

MATERIALS AND METHODS

This study was conducted at University Research Farm, Tamil Nadu Veterinary and Animal Sciences University, Madhavaram, using Large White Yorkshire pigs. In this trial, each pig was tattooed with individual identification in the right ear, sexed and weighed within 24h of birth. Group I consisting of a total of 107 piglets (53 males and 54 females) weaned at 28 days and group II consisting of 78 piglets (33 males and 45 females) weaned at 56 days that littered between March and April were considered for this trial. The experimental sows were in their third parity. The trial was carried out in

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tropical climatic condition during the summer with the temperature around 35 – 40°C. The litter size of the 28 day weaning group was 9.5 ± 0.228 and for 56 days the litter size was 9.9 ± 0.456 . At weaning, pigs were weighed individually and allotted to nursery pens. The 28 days and 56 days weaned pigs were grouped separately with uniform managerial and health care. Both the groups were fed ad libitum with concentrate feed consisting of Maize (35%), GNC (15%), Wheat bran (16%), Deoiled rice bran (31%), salt (1%) and mineral mixture (2%) with the crude protein content of 15.86%. Periodic weighments were recorded at monthly intervals up to 6 months of age. Statistical analysis was carried out using unpaired student 't' test for comparison of the performance up to marketing age due to different age of weaning.

RESULTS AND DISCUSSION

The results are tabulated and furnished in Table 1. The weaning weight of piglets during 28th day and 56th days were 8.73 ± 1.32 and 14.77 ± 0.77 Kg. respectively. They varied highly significant ($P \leq 0.01$) among them. The weight at 6 months of age for the 28-day and 56 day weaning groups were 55.58 ± 1.13 and 53.13 ± 1.05 Kg. respectively, which did not vary significantly, in spite of numerical superiority for 28-day weaned piglets. The livability was calculated to be 96.3% for 28th day weaning group and 100% for the 56th day weaning group. The daily weight gains for the 28th day and 56th days weaning group were 0.32 ± 0.007 and 0.33 ± 0.009 Kg respectively and did not vary significantly. It was also noticed that all the sows weaned at 28 days returned to estrus by 4-5 days post weaning whereas, sows weaned at 56 days the interval varied between 10-20 days.

This study revealed that weaning on 28th day does not have much significant effect on the weight at marketing of pigs when compared to that

weaned on 56th day. However, early weaning did not adversely affect post-weaning rate of growth and there had been marginal superiority. This contradicted the findings reported by Schinckel *et al.* (2003) which could be due to optimum managerial practices. However, early weaning did not adversely affect post weaning rate of growth and in fact, there was marginal superiority as reported by Fenton *et al* (1985).

Further early-weaned piglets have increased thymus size when compared to conventionally reared piglets. The thymus is responsible for development of the immune system and production of growth hormone, and a greater thymus/body weight ratio may explain the improved growth rate (Oliver, 1997). Weaning after day 14 usually results in a tighter synchrony of post weaning estrus and higher fertility at that estrus compared with weaning earlier.

The reduction in the livability for the 28th day weaned group was due to colibacillosis, which led to mortality of the piglets. Further there was no significant difference in the daily weight gain of piglets between the two groups. This indicated that early weaning does not have any influence in the weight gain of the piglets.

This study has concluded that weaning at 28 or 56 days did not have significant effect on the weight at marketing of Large White Yorkshire pigs. Further, as 28 days weaning can reduce the vertical transmission of potentially dangerous organisms to the piglets and leads to early post weaning estrus and increased litters/sow/year, it may be recommended that the piglets can be weaned at 28 days of age.

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Table 1

Analysis of weight up to marketing under different weaning management methods

	Weaning weight		Weight at 6 weeks		Mortality		Daily Weight Gain	
	15 days weaning (Kg)	30 days weaning (Kg)	15 days weaning (Kg)	30 days weaning (Kg)	15 days weaning	30 days weaning	15 days weaning (Kg)	30 days weaning (kg)
Mean	11.11	11.77	28.33	31.11	96.7%	100%	0.121	0.111
SEM	1.11	1.11	1.11	1.05			0.007	0.009
error	1.66		1.76				0.157	
P-value	0.0001		0.1575				0.111	
Result	**		NS				NS	

** - Highly significant; NS – Non significant