

EFFECT OF SWILL FEEDING ON THE REPRODUCTIVE PERFORMANCE OF LARGE WHITE YORKSHIRE PIGS

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ABSTRACT

An experiment was conducted to find out the effect of swill feeding on reproductive performance of pigs. A total of sixteen Large White Yorkshire weaned female piglets (56 days) were selected at random and were divided into two groups consisting of eight piglets in each group and they were subjected to different feeding regimens viz., 100 per cent concentrate (T1) and the same was replaced on DM basis with hostel food waste at 50 per cent level (T2). The overall weight gain and average daily gain was significantly ($P<0.01$) higher from weaning to one year of age in T2 when compared to T1. But the feed conversion efficiency was better in T1 than the T2 . The mean litter size at birth and weaning were higher in T2 compared to T1. Similarly, the gilts fed with 50 % swill feed (T2) produced piglets with significantly ($P<0.01$) higher birth weight and weaning weight than the 100 % concentrate fed group. The gestational weight gain and lactational weight loss were significantly ($P<0.01$) higher in T2 compared to T1.

KEY WORDS : Feeding regimens, Growth, Reproduction, Pigs

INTRODUCTION

The success and efficiency of pig farming largely depends upon the reproductive performance of pigs. Reproductive traits are considered to be important because meat production is closely associated with breeding efficiency. In organized farms, pigs are kept in modern sheds and reared on concentrate feed. But high grain diets for pig increases the cost of feeding as well as decreases the availability of grain for human population in developing countries (Joseph and Abolaji, 1997). In swine production, the feed costs about 75 per cent of the total expenditure. The feed cost may be reduced by inclusion of organic waste from animal and plant origin. The swill feeding practice is found cost effective for fattening pigs, swill feeding upto 50 per cent level can be adopted without affecting the growth and carcass traits (Ramesh et al., 2010) and study on the reproduction aspect is scanty. Hence this study was conducted to assess the reproductive performance of pigs raised under swill feeding to provide more valid and technical information to the pig farmers.

MATERIALS AND METHODS

An experiment was conducted at swine unit, Livestock farm, Department of Livestock Production and Management, Veterinary College and Research Institute, Namakkal to find out the effect of swill feeding on growing pigs. A total of 16 Large White Yorkshire weaned piglets (56 days) were selected at random and were divided into two groups consisting of eight female piglets in each group and they were subjected to different feeding regimes viz., 100 per cent concentrate (T1) and the same was replaced on DM basis with hostel waste at 50 per cent level (T2) . The animals were maintained in the same environment and management conditions. Feeding trial was conducted upto production of first litter and then upto weaning of piglets. The feed intake was recorded and feed conversion efficiency was calculated. One week before the expected date of farrowing the pregnant gilts were transferred to farrowing pens. They were confined to farrowing pen till the

weaning of their piglets at the age of 8 weeks. Piglets of all the groups were provided with creep rations upto weaning as per NRC.

The reproductive traits such as age at first mating, litter performance, gestational weight gain, lactational weight loss and preweaning mortality were recorded in all the pigs. The collected data were analysed as per the method suggested by Snedecor and Cochran (1989).

RESULTS AND DISCUSSION

Dry matter intake and feed efficiency

From the table 1 it can be observed that the difference in daily feed intake on dry matter basis was significantly ($P < 0.01$) higher in swill fed group (1.48 ± 0.00 kg) than concentrate fed group

Table 1 . Mean \pm SE of growth and reproductive performance of Large White Yorkshire Pigs under different feeding regimens

Parameters	100 per cent Concentrate group (T1)	50 per cent concentrate and 50 per cent swill feed group (T2)	't' value
Growth performance			
Overall weight gain (kg)	102.32 ± 4.55^a	116.45 ± 3.87^b	6.07**
Average daily gain (gm)	340.75 ± 49.93^a	388.00 ± 43.08^b	6.09**
Dry matter intake (kg)	1.23 ± 0.00^a	1.48 ± 0.00^b	18.08**
Feed conversion efficiency	3.60 ± 0.07^a	3.84 ± 0.59^a	2.61*
Reproductive performance			
Age at first farrowing (days)	236.62 ± 13.7^a	231.37 ± 15.4^a	0.867
Litter size at birth (No.)	9.50 ± 2.0^a	9.62 ± 1.19^a	0.177
Litter size at weaning (No.)	8.62 ± 1.12^a	9.00 ± 1.42^a	0.663
Litter weight at birth (kg)	12.18 ± 1.91^a	14.06 ± 1.74^b	2.784**
Litter weight at weaning (kg)	100.32 ± 7.96^a	113.0 ± 10.63^b	2.628**
Percentage of preweaning mortality	9.21	6.49	
Gestational weight gain (kg)	34.62 ± 2.91^a	43.25 ± 3.78^a	9.427**
Lactational weight loss (kg)	8.56 ± 2.17^a	12.65 ± 0.58^b	6.966**
Period of post weaning oestrus (days)	4.5 ± 0.85^a	4.25 ± 1.07^a	0.509

Mean bearing different superscript in a row differ significant at

* five per cent level ($P < 0.05$) and **one percent level ($P < 0.01$)

(1.23 ± 0.00 kg). This result was in contrast with Shields and Mahan (1980) who observed no significant difference in feed intake fed with different levels of protein in the ration. The average feed conversion efficiency was significantly ($P < 0.05$) better for the pigs fed with 100 per cent

concentrate fed group (3.60 ± 0.07) compared to 50 per cent swill fed group (3.84 ± 0.59). This better feed conversion efficiency observed for concentrate fed group might be due to higher protein and energy content than the swill feed. The feed conversion efficiency observed in this study for the pigs maintained on concentrate feed was lower than the reports of Anil et al. (2007) who reported that the feed conversion efficiency for 4.94 ± 0.52 for concentrate fed and 3.91 ± 0.59 for swill fed group.

Body weight and average daily gain

Analysis of variance showed significant effect of diets from start of the experiment to end. The pigs fed with 50 per cent swill fed group attained significantly ($P < 0.01$) more weight at one year of age (116.45 ± 3.87 kg) when compared to 100 per cent concentrate fed group (102.32 ± 4.55 kg). This finding was supported by Sinha (1989) who also observed faster growth in pigs maintained on kitchen waste as compared concentrate fed group. Harikumar (2001) who has also recorded a higher slaughter weights for Large White Yorkshire pigs maintained on chicken offal and restaurant waste than those on concentrate feed. The higher growth rate in pigs maintained completely on kitchen waste played a significant role in meeting the requirement of growing animals (Raju et al., 2004).

Similarly the average daily gain was also statistically ($P < 0.01$) different between the treatment groups it was higher in 50 per cent swill fed pigs (388.0 ± 43.08 g) compared to 100 per cent concentrate fed group (340.75 ± 49.93 g). Harikumar (2001) recorded average daily gain of 318.98 ± 11.09 g and Rohila et al. (2000) recorded 335.45 ± 17.4 g for Large White Yorkshire pigs which was lower than the values obtained in concentrate fed pigs in the present study.

Reproductive performance

Age at first farrowing:

From the table it can be seen that although the diet had non-significant influence on age at first farrowing, but lowest and highest age at first farrowing was noticed in gilts maintained on 50% replacement of swill feed and concentrate mixture, respectively. Raju et al. (2004) also got lower age at first farrowing in Large White Yorkshire pigs maintained on garbage.

Litter performance:

Diet had non-significant influence on litter size at birth and at weaning. Though, the litter size at birth not that much differ between the groups, at weaning more number of piglets weaned in swill fed group. Almost all the authors who had worked on finding the effect of garbage feeding in the diet of sows had uniformly stated that the litter size at birth was not affected by swill feeding. The litter weight at birth and at weaning was significantly ($P < 0.01$) higher in gilts that fed with swill fed group than the concentrate group. There was a progressive increase in weight at birth and at weaning with increased proportion of kitchen waste in pig ration. It might be due to the higher gestational weight gain and lactational weight loss in swill fed group. Further, the litter weight at weaning is an index of milk production in the dam. Finding was also supported by Raju et al. (2004) who concluded that kitchen waste played a significantly better role to meet the nutrient requirement for productive pigs.

Prewaning mortality:

Prewaning mortality of piglets was lowest in pigs maintained on 50% swill fed group. Findings of this study are in confirmation of those of Ranjan (2000) who also noticed significantly lowest preweaning mortality in pigs maintained on hostel waste (14.29%) than other groups ranging from 19.87 to 21.56%. It was inferred that feeding of hostel waste to gilts both during gestation and lactation not only increased the litter size at weaning, but also improved the survival rate of suckling

piglets.

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