



# Balanced Feeding at Pre- and Post Farrowing Period to Evaluate the Performances of New Born Piglets

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## ABSTRACT

A systematic study was conducted to evaluate the effect of balanced feeding to pregnant gilt and sow during pre and post farrowing on performances of their newborn piglets upto weaning ( 8 weeks) at village condition of Namsai district of Arunachal Pradesh. A total of 36 cross bred ( Large white Yorkshire X Local) gilts and sows were selected for the study and divided into two groups. Trial group animal (n=18) were fed 1.5 kg of extra concentrate balanced feed along with traditional feed and in control group animals (n=18) fed only with traditional feed prepared with locally available feed stuff. Data were recorded of 215 numbers of new born piglets received in both the groups on the basis of piglet mortality and body weight at birth, 2<sup>nd</sup>, 4<sup>th</sup>, 6<sup>th</sup> and 8<sup>th</sup> weeks of age. The average pre-weaned piglet mortality was recorded as 14.2%. The average piglet body weight at birth, 2<sup>nd</sup> weeks, 4<sup>th</sup> weeks, 6<sup>th</sup> weeks and 8<sup>th</sup> weeks in the trial and control group was recorded as 0.85 ± 0.02 and 0.65 ± 0.02; 3.35 ± 0.12 and 2.29± 0.05; 5.57 ± 0.21 and 3.73 ± 0.06; 7.83 ± 0.31 and 5.24 ± 0.02 and 10.33 ± 0.41 and 7.14 ± 0.02 kg, respectively.

**Key Words:** Body weight, Balanced feed, Cross-bred, Large White Yorkshire

## INTRODUCTION

Pig is well known for its unique quality of efficient feed conversion ratio, early sexual maturity, higher litter size, short generation intervals and less susceptible to diseases. Pig population in India is 9.06 million as per the 20<sup>th</sup> Livestock census (Anon, 2019), declined 12% than 19<sup>th</sup> census. Declination of the pig population may be due to lack of scientific approach towards piggery management specially feeding aspects since majority of the pig rearer are belongs to socially backward and economically weaker section of the society. They provides their animals with locally available feeds and forages with improper and imbalanced nutrients. Healthy piglet production with optimum birth weight may reduces the early piglet mortality and enhance its future productivity. Birth weight of the newborn piglet can be increased efficiently by abundant feeding of the dam during the last two to three weeks

of pregnancy since birth weight was seen as one of the most important determinant of survival and growth ( Peltoniemi *et al*, 2007). The relationship between maternal nutrient intake during pregnancy and growth of the fetus is extremely important in determining pregnancy success, life-long health and the productivity of the newborn (Godfrey and Barker, 2000; Godfrey, 2002). Moreover recent studies also reveal that extra feed intake during pregnancy enhances birth weight of newborn piglet of gilt but not in sow ( Goncalves *et al*, 2016). Again extra balanced feeding during post farrowing period may enhance milk production of dam presume more growth to the newborn piglet before weaning. Hence, a study was carried out to evaluate the effect of extra balanced feeding to pregnant gilt and sow during pre and post farrowing on performances of their newborn piglets upto weaning (8 weeks) at village condition.

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## MATERIALS AND METHODS

The study was undertaken to evaluate the effect of feeding during pre and post farrowing period of pregnant swine on the performance of their new born piglets upto age of weaning ( 8 weeks). The experiment was conducted at farmers level of Namsai district. A total of 36 cross bred ( Large white Yorkshire X Local) gilts and sows were selected for the study. In the Trial group animals (n=18) were fed 1.5 kg of extra concentrate balanced feed per day per animal along with traditional feed prepared with locally available feed stuff ( half boiled Collcasia, banana stem, maize grain, rice grain, rice bran etc.) one month prior to farrowing and continue upto weaning. In control group animals (n=18) were fed with only traditional feed prepared with locally available feed stuff. All pregnant animals were individually fed at farmer level. A total of 155 and 160 piglets were born from trial group and control group animals respectively and data were recorded on the basis of piglet mortality and body weight at birth, 2<sup>nd</sup>, 4<sup>th</sup>, 6<sup>th</sup> and 8<sup>th</sup> weeks of age.

## RESULTS AND DISCUSSION

The average pre-weaned piglet mortality in the present study was recorded as 14.2% with 11.6% was in trial group and 16.9% was in control group, respectively. The results were comparable with those reported early by Gokuldas *et al* (2015) as 14.94% and 14.28% pre-weaned piglet mortality in Ghungroo and Niang Megha pig and Boro *et al* (2021) as 16.21% in Ghungroo pig, respectively. But higher piglet mortality was reported by Kumaresan *et al* (2006) as 29.73% in the non descript local pig of Mizoram. However, in the present study recorded lower pre-weaning piglet mortality in the trial group compare to the control group was might be due to additional balanced feeding to the trial group resulted higher piglet weight at birth as birth weight was seen as one of the most important determinant of survival and growth of newborn piglet.

The average litter size at the birth in the present study was  $8.71 \pm 0.23$  ranging from 6-12 numbers. Similar finding was also reported by Boro *et al*

(2021) as  $8.22 \pm 0.46$  in Ghungroo pig. Lower litter at birth in compare to the present study was also reported by Paramasivam *et al* (2021) as  $7.89 \pm 0.51$  in Large White Yorkshire (LWY) pig and Sahoo *et al* (2012) as  $6.5 \pm 0.21$  in Niang Megha pig. However, Lalrintluanga (2015) reported higher litter size at birth ( $9.05 \pm 0.25$ ) in LWY pig under indigenous system of management.

### Birth weight

The body weight of piglets at birth and upto weaning of both trial and control group were represented in Table 1. The average piglet weight at birth in the present study was recorded as  $0.75 \pm 0.02$ kg ranging from 0.56 kg to 0.93 kg. The average piglet body weight at birth in the trial and control group was recorded as  $0.85 \pm 0.02$ kg and  $0.65 \pm 0.02$ kg respectively. Lower birth weight than the present study was earlier reported by Sahoo *et al* (2012) and Kumaresan *et al* (2006) as  $0.48 \pm 0.23$ kg in Khasi local pig and  $0.64 \pm 0.02$  kg in Niang Megha pig. But higher birth weight was also reported by Kumar *et al* (2018) as  $1.20 \pm 0.01$ kg in T&D and  $1.36 \pm 0.02$  kg in 75% Hampshire pig and Paramasivam *et al* (2021) as  $1.38 \pm 0.03$  kg in Large White Yorkshire pig. The different in body weight at birth might be due to difference in breed, system of rearing and feeding management etc.

**Table 1. Body weight of piglet in two groups upto weaning.**

Age	Body weight (kg) of piglet in Trial group	Body weight (kg) of piglet in Control group
At birth	$0.85 \pm 0.02$	$0.65 \pm 0.02$
2 <sup>nd</sup> weeks	$3.35 \pm 0.12^a$	$2.29 \pm 0.05^b$
4 <sup>th</sup> Weeks	$5.57 \pm 0.21^a$	$3.73 \pm 0.06^b$
6 <sup>th</sup> Weeks	$7.83 \pm 0.31^a$	$5.24 \pm 0.02^b$
8 <sup>th</sup> Weeks	$10.33 \pm 0.41^a$	$7.14 \pm 0.02^b$

<sup>ab</sup> Mean bearing different superscripts in a row differ significantly ( $P < 0.05$ ).

The body weight of piglets in trial group significantly ( $P < 0.05$ ) higher at 2<sup>nd</sup>, 4<sup>th</sup>, 6<sup>th</sup> and 8<sup>th</sup> weeks of age. The body weight of piglet in trial

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group was comparatively higher at 6 weeks of age compare to earlier report of Kumar *et al* (2018) as  $6.73 \pm 0.10$  kg in T&D and  $6.96 \pm 0.11$  kg in 75% Hampshire pig but value was comparable with at 8 weeks. The body weight of control group found to be lower compare with the earlier report of Kumar *et al* (2018) in T&D and 75% Hampshire pig. Peltoniemi *et al* (2007) reported that the birth weight of newborn piglet can be increase most efficiently by abundant feeding of dam during last two to three weeks of pregnancy. The higher body weight of piglets in all ages of trial group over control group in the present study might be due to the feeding of extra balanced feed to the trial group animals during the experimental period which help to accelerate fetal growth during pre partum period and sulk more milk from the farrowed mother resulted more growth during post partum period. Control group animals fed only with unconventional feed stuff deficit with proper nutrients may be resulted lower body weight gain at traditional system of management.

The body weight of piglets farrowed by sow and gilt in trial group up to weaning were represented in Table 2. The overall body weight of piglets farrowed by gilt in trial group was recorded higher in all ages upto weaning over piglets farrowed by sow but difference was non-significant.

**Table 2. Body weight (Kg) of piglet farrowed by Sow and Gilt in trial group upto weaning.**

Age	Body wt of piglet farrowed by Sow	Body wt of piglet farrowed by Gilt
At birth	$0.81 \pm 0.03$	$0.88 \pm 0.01$
2 <sup>nd</sup> weeks	$3.14 \pm 0.19$	$3.56 \pm 0.14$
4 <sup>th</sup> Weeks	$5.13 \pm 0.31$	$6.01 \pm 0.19$
6 <sup>th</sup> Weeks	$7.01 \pm 0.41$	$8.65 \pm 0.13$
8 <sup>th</sup> Weeks	$9.41 \pm 0.62$	$11.24 \pm 0.03$

Soto *et al* (2011) also reported that providing extra gestational feed per day to pregnant animals from day 100 up to farrowing increased birth of piglet farrowed by gilts but similar observation was not recorded with sows.

## Economic impact

The economic impact of both trial and control group animals was also analyzed. The B C ratio of both the groups were calculated on the basis of considering feeding of extra 1.5kg of balanced feed to the trial animals per day per animals upto weaning and mortality and growth rate of piglets at weaning. The B C ratio in the present study was recorded as 3.5 and 2.7 in trial and control group animals respectively.

## CONCLUSION

Feeding extra balanced feed to the pregnant swine during pre and post farrowing period reduces the pre-weaned piglet mortality and improves body weight at birth and upto weaning. The body weight of piglets in trial group farrowed by gilt was recorded higher in all ages upto weaning over piglets farrowed by sow but difference was not significant. The extra balanced feeding to the pregnant animals may be enhanced the swine productivity at village condition of Namsai district.

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