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Management of pre-weaning Ghungroo piglet mortality

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Abstract

Management of preweaning piglet mortality is very important as it directly affect the economy of the farm. Many factors are responsible for the cause. Factors affecting pre-weaning mortality viz. intrapartum still-birth, crushing by sow, hypothermia, starvation due to poor maternal behaviour and low viability of piglet were observed and recorded. Piglet body weight at birth and weaning, litter size at birth and weaning, pre-weaning piglet mortality, stillbirth (%), mortality due to hypothermia (%), mortality due to starvation [(due to poor maternal behaviour and low viability of piglet (%))] in treatment group were found to be 0.96 ± 0.04 kg and 9.92 ± 0.27 kg, 7.66 ± 0.55 and 7.00 ± 0.77 , 6.67%, 10%, 1.67%, 1.67% and 3.34%, respectively. In control group, the above mentioned parameters were found to be 0.93 ± 0.03 kg and 8.13 ± 0.15 kg, 9.50 ± 0.95 and 6.50 ± 0.98 , 17.46%, 20.63%, 6.35%, 4.76% and 7.94%, respectively. Management interventions intended to reduce piglet mortality were given due emphasis. Health of piglets and dam are thereby maintained in good condition for producing quality piglets.

Keywords: Preweaning, mortality, hypothermia, stillbirth, maternal behaviour

Introduction

Farrowing management is one of the most essential component of the swine production system. Farrowing and lactation are the two most critical phases of swine production. A relatively high proportion of pig mortality occurs during these periods. A greater understanding of the events that take place during, before and after farrowing and lactation can lead to improved sow management and this will result in increased litter size and weight at weaning time. It prevents and reduces mortality of piglets and their dams. Thereby, it helps to produce healthy and quality piglets and at the same time health of sows can be maintained.

Farrowing Management is an area requiring the utmost standards of care to ensure that a strong viable piglet enters the production cycle in the best possible health. For this operation, there is need of suitable housing and necessary equipments to protect the animals against inclement weather conditions and thereby reducing dam and piglet mortality. Farrowing house management plan must be developed for each swine operation. Scheduled farrowing through a well-organized production system is needed for good performance, health and comfort for the sow and their piglets. These practices, along with good management of the litter will result in increased litter size and weights at weaning and thereby improve the profitability of the enterprise. Many factors are responsible for pre-weaning piglet mortality Viz. intrapartum still-birth, hypothermia, starvation, disease, crushing and savaging. It requires effective management strategies, farrowing supervision and good stock-manship. Pre-weaning mortality is more than 20% in the farm. The peri-parturient period is particularly important time for management interventions intended to reduce piglet mortality. The present study is therefore, an attempt to find out the importance of management strategies on the reduction of preweaning piglet mortality.

Materials and Methods

The study was undertaken in Pig Breeding Unit, AAU-ZLRS, Mandira, Hekera, Kamrup during 2021- 2022.

For the present study, pre-weaned piglets were selected from 12 nos. of farrowing Ghungroo sows that were to be farrowed during the above mentioned period. Sows were taken from the farm itself and grouped into two (2) groups consisting of six (6) nos. of sows in each group. Control group (T_0) will be subjected to the existing system (Traditional method) of management fallowed in the farm and Treatment group (T_1) was provided with creep area, bedding materials, heating bulbs (Infrared bulbs/electric brooder) and other managerial

practices. During winter, sows in the Control group (T₀) were subjected to natural farrowing in open area with bamboo enclosures or fencing with little intervention such as providing a temporary shelter area alongside the farm perimeter wall. Piglets were weaned at 56 days. They were fed with pre-starter, starter ration and other feed supplements. Deworming and iron injection were done as per schedule. These management interventions were given to Treatment group (T₁) and the outcome i.e mortality rate among the two groups was compared. Factors pertaining to pre-weaning piglet mortality and outcome of management interventions strategies applied w.r.t piglet mortality due to stillbirth, crushing by sow, hypothermia, starvation due to poor maternal behaviour and low viability of piglet was recorded throughout the experimental period. The data generated from this study were organized and processed for further analysis. Mean with Standard errors (SE) for different traits were estimated with the help of SPSS for the study that was conducted.

Results and Discussions

Piglet body weight

The detail findings of the present study have been given in the table no. 1. The birth weight of Ghungroo piglets recorded in different groups i.e T₀ (control) and T₁ (Treatment) were 0.93±0.03 kg and 0.96±0.04 (0.8-1.1) kg, respectively. Piglet weight at 8 weeks of age weaning was significantly ($P<0.05$) higher in T₁ (9.92±0.27 kg) as compared to T₀ (8.13±0.15kg). Similar findings was reported by Sahoo *et al.*, 2012^[8, 9] in Ghungroo pig. (0.96±0.02 kg). In contrast, lower body weight than the present study was reported by Bujarbaruah, 2006^[2], (0.485±0.23 in Khasi Local pig) and Sahoo *et al.*, 2012^[8, 9] (0.64±0.02 kg in Niang megha pig). The differences may be due to managerial issues and genetical factors.

Litter size

In the present study, litter size found at birth in T₀ and T₁ were 7.66±0.55 and 9.50±0.95, respectively. Significant differences were also noted in terms of litter size at weaning in T₁ (7.00±0.77) i.e 91.30% as compared to T₀ group

(6.50±0.98 i.e 68.42%). Similar findings were reported by Prakash *et al.*, (2008) that the average litter size of indigenous pig was 6.78±0.11. In contrast, Rajiv and Pandey (2000)^[7], conducted an experiment on economics of pig rearing in Haryana and reported that the average litter size was 8. Besides, the lowest litter size at weaning was reported by Nath *et al.*, (2013)^[5] as 2.79±0.24 in Sikkim local pig and the highest being reported by Zaman *et al.*, 2013^[10] as 9-12 in WB (Ghungroo pig). Higher litter size at birth was reported in Ghungroo piglet as 8.7±0.25 (Gokuldas *et al.*, 2015^[3] and 10.02±0.35 (Sahoo *et al.*, 2012)^[8, 9]. reported litter size of and in Ghungro, respectively. Factors like type of pigs, management practices, mortality rate and prevailing weather or climatic condition affects the litter size at weaning (Borkotoky *et al.*, 2014)^[1]. In the present study, the lowest litter size at weaning in T₀ group is due to poor management or lack of proper farrowing infrastructure to cope up with stress associate with farrowing on the other hand highest litter size in T₁ group is due to proper pre-weaning managerial interventions.

Stillbirth, Piglet Mortality and factors affecting it

Highest stillbirth has been recorded in T₀ group (20.63%) as compared to T₁ group (10%). Prewaning mortality in control and treatment group was found to be 17.46% and 6.67%, respectively. Similarly, pre-weaning Ghungroo piglet mortality has been recorded as 14.94% in Ghungroo (Gokuldas *et al.*, 2015)^[3] which is in contrast to the findings of Kumaresan *et al.*, in the nondescript local pig of Mizoram (2007 29.73%). Mortality in pre-weaning piglet might due to poor management, low nutrition and the failure to address the diseases, lack of hygiene and sanitation.

Pre-weaning mortality due to crushing by sow (%), mortality due to hypothermia (%) and mortality due to starvation (due to poor maternal behaviour and low viability of piglet) in T₀ group were 6.35%, 4.76% and 7.94% whereas in T₁ group were 1.67%, 1.67% and 3.34%, respectively. The reduction in pre-weaning piglet mortality due to various factors and stillbirth in T₁ as compared to T₀ group is due to pre-weaning managerial interventions.

Table 1: Factors affecting piglet mortality and its performances

Particulars	Control group (T ₀)	Treatment group (T ₁)	Range (T ₁)
Piglet body weight at Birth (kg) Mean±SE	0.93±0.03	0.96±0.04	0.80-1.1
Piglet body weight at Weaning (kg) Mean±SE	8.13±0.15 ^a	9.92±0.27 ^b	9-11
Litter size at Birth Mean±SE	9.50±0.95 ^a	7.66±0.55 ^b	6-9
Litter size at Weaning Mean±SE and	6.50±0.98	7.00±0.77	6-8
Pre-weaning piglet mortality (%)	17.46	6.67	-
Stillbirth (%)	20.63	10	-
Mortality due to crushing by mother (%)	6.35	1.67	-
Mortality due to hypothermia (%)	4.76	1.67	-
Mortality due to starvation [due to poor maternal behaviour and low viability of piglet (%)]	7.94	3.34	-

Conclusion

Many factors are associated with pre-weaning piglet mortality Viz. intrapartum still-birth, hypothermia, starvation, disease (MMA), crushing and savaging and the same have been noticed in the present study (intrapartum still-birth, crushing by sow, hypothermia and starvation due to poor maternal behaviour and low viability of piglet. Management interventions that were applied, significantly reduce pre-weaning piglet mortality. So, management of pre-weaning piglet is utmost important for economic of the farm as well as

quality piglet production.

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