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PERFORMANCE OF MIZO LOCAL PIGS (ZOVAWK) UNDER TRADITIONAL HOUSING SYSTEM

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ABSTRACT

Ten Zovawk (Mizo local pig) female and two male pigs of 1st parity (4-5 months of age) were selected randomly from a sizable population maintained at Instructional Pig Farm of College of Veterinary Sciences & A.H., Aizwal, Central Agricultural University, Mizoram to study the performance under traditional housing system. The body weight changes of piglets up to 12 week of age showed a linear increase in growth. The conception rate in sows was 100%. Litter size at birth and weaning were 7.3± 0.67 and 6.1±0.71, respectively. The overall mortality was 14.29%. Out of that, 25% piglets died within first week after birth. There were no reports of mortality in piglets between 8-12 weeks of age and adult stages. The majority of pigs died due to respiratory distress associated with pyrexia. The profit/piglet was found to be Rs.611.76 which was remunerating for the rearing system in which farm labour and construction costs of sty were significantly low.

Key words: Zovawk, Traditional Housing, Performance.

Traditional housing system mostly involves indigenous breeds and low-cost utilities. Therefore, level of performance is found to be low compared to improved intensive housing system. Nevertheless, it has still relevance for small and marginal backyard farmers belong to backward and tribal communities in India. This system has been found sustainable for farmers in hill animal husbandry system in Northeast India. Mizo local pig (Zovawk) is a small variety livestock well-adapted to the climate of Mizoram and adjoining states and even in Bangladesh. These pigs are well-known for its hardiness and resistant to harsh climatic condition since time immemorial in Mizo society. However, there are not much documented records about Mizo local pigs except some folklore passed on from generation to generation about its novelty. Scientific information regarding its feeding, breeding, management and economics of production might be useful basis for developing these animals at par with other crossbreds and pure animals in future. Keeping in view of this, the study was conducted as part of an Internal Research Project to document performance of Zovawk under traditional housing system.

MATERIALS AND METHODS

Ten Zovawk (Mizo local pig) female and two male pigs of 1st parity (4-5 months of age) were selected randomly from a population maintained at Instructional Pig Farm of College of Veterinary Sciences & A.H., Aizwal, Mizoram. The animals were kept in raised traditional sty made of bamboo and wooden planks, In addition to the sty, a

loafing area was provided for animals. Different pens were constructed for keeping male and female pigs separately. Although males were kept separately, females were kept in close contact with their counterparts to gain the positive effect of 'male effect' on females. A combination of traditional as well as concentrate feeding system was followed. Effort was made to use locally available feed sources viz., banana stems, colocassia, squash, kitchen waste etc in daily feeding during the study period. Out of total dry matter requirement, one fourth of the total requirement was met with commercial concentrate feeds. All the health measures viz., vaccination, deworming and use of disinfectants were followed during the reported period as per standard procedures. Body weight changes in piglets were recorded from birth to 12 week of age. Some important reproductive parameters were recorded and analysed as per the standard procedure. Symptoms of diseases and mortality percent were also recorded and analysed. Economics of production was calculated based on existing local prices of materials during the period.

RESULTS AND DISCUSSION

The body weight changes of piglet's up to 12 week of age showed a linear increase in growth. The body weight of piglet was 0.574±0.03 and 2.93±0.14 kg at birth and weaning, respectively. The body weight of piglet was 8.45±1.76 kg at 12th week of age. The average body weight gain was 42.12 ± 5.83 g during pre-weaning stage (up to 8 week of age) and 198.29**±** 10.02 g during post weaning age (8-12 week of age)**.** The conception rate was optimum in sows. Body weight of gilt at the time of breeding was significantly lower than crossbred and pure-breeds commonly reared by farmers in Mizoram, although age at breeding was comparable with crossbred and pure breeds of pigs[5]. The average age at farrowing was 11-12 months. Litter size at birth and weaning were within the normal range and were comparable with pigs reared under intensive rearing system[1]. In regards to mortality of piglets, it was reported that more than 50% mortality in pigs occurred during the first few days after birth, and the first 24 hours of life of newborn piglets was found to be most vulnerable[6]. This present finding was found to be significantly lower compared to other findings in which pre-weaning mortality in piglets was found to be as high as 59.76% during 0-14 days of age[8]. In the present investigation, the overall mortality was 14.29%. About 16.22% piglets died below 8 weeks of age. 25% piglets died within first week after birth. There was no mortality during post-weaning and adult stages. These findings were supported by other investigations in which overall mortality was found to similar in organized swine farm[2]. Comparatively lower mortality rate in the present investigation might be due to the comfortable climatic condition prevailed during the study period. Sufficient biological space, low stock density, normal voiding behaviour, strong mothering ability and maintenance of strong hierarchy in the experimental housing system acted positively for maintenance of health and well being of animals under study. Respiratory distress associated with pyrexia was the main cause of mortality. This might be due to open rearing system in which pigs might be, off and on, under cold stress at night during experimental period. Affection due to enteritis was very less. This might due to sufficient loafing area provided to the pigs, which facilitated exhibition of normal eliminative (faecal) behaviour in pigs and therefore, shelter area was found to be neat and clean during the study period. This result was in agreement with the Annual report (2012) of AICRP (pigs), Mizoram in which about 36.41% pre-weaning mortality in Zovawk pigs resulted due to pneumonia. Likewise, piglet mortality of 15.82% and 15.68% were reported due to respiratory disorder[3,4]. Contrary to it, in another experiment, it was reported that gastrointestinal disorder was the major cause of pig mortality in various swine farms in Indian condition[8]. These variations might have resulted due to variations in rearing system, location, climate, and breeds. Birth weight of dead piglets was found to be significantly ($P<0.05$) lower

than birth of alive piglets. This clearly indicated that mortality rate is higher in piglets with low birth weight[7]. Low birth weight coupled with cold climate condition might have caused significantly higher mortality in the present study. Economics of production was calculated considering the local price of the commercial and other unconventional feeds as the feed cost was the major recurring input in traditional rearing system. The farm gate price of piglet (Rs. 150.00/kg BW of piglet) was taken as per the existing price in and around Aizawl during the study. The calculated profit/piglet was Rs.611.76 which was found to be remunerating for the rearing system in which farm labour and construction costs of shed were minimal.

Table 1.Performance of Sows

Sl.No.	Parameters	Mean ± SE
1	Body weight at breeding (kg)	29.16±2.19
2	Duration of Estrous cycle (days)	21±0.68
3	Duration of Estrus (hrs)	28±2.53
4	Conception rate (%)	100
5	Body weight gain during pregnancy (kg)	11.83±1.22
6	Gestation period (kg)	112.83±0.75
7	Farrowing time (min)	70±6.71
8	Post farrowing BW changes (From farrowing till next heat) (kg)	9.75±1.18
9	Litter size at birth	7.4± 0.69
10	Litter size at weaning (8 weeks)	6.1±0.74
11	Average body weight of piglet (birth)	0.57±0.03
12	Average body weight of piglet (weaning)	2.93±0.14
13	Average body weight of piglet (at 12th week)	8.5±1.76

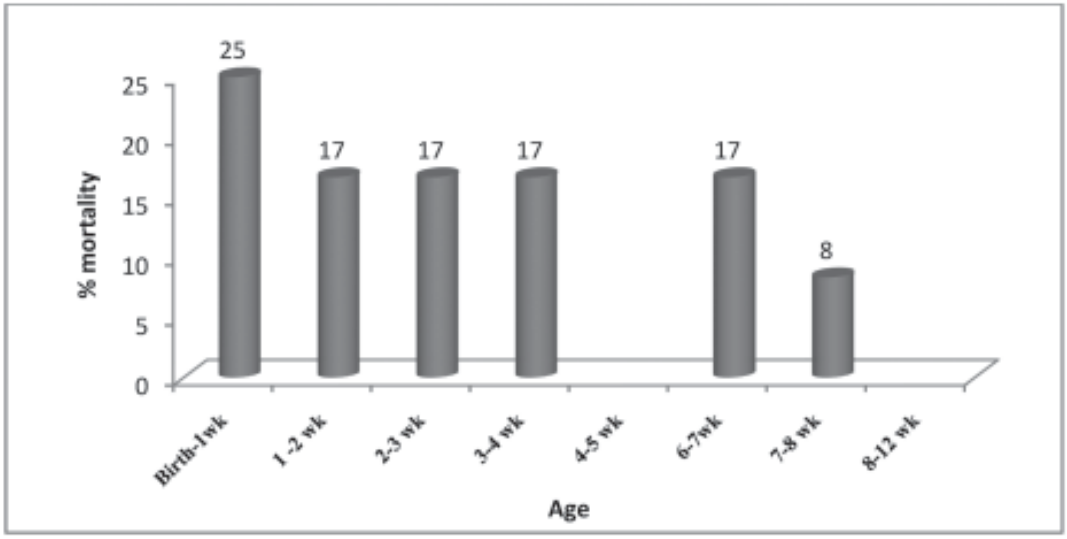

Fig 1: Mortality Pattern

Table 2: Economics of piglet production in relation to feed cost

S.No	Parameter	Economics
1	Litter size at weaning (No)	6.1
2	Total piglet production (No)	61
3	Average body weight piglet at sale (kg)	8.45
4	Total production of piglet (kg)	515.45
5	Feed cost (Rs.)	40,000.00
6	Feed cost/piglet (Rs.)	655.74
7	Feed cost/kg piglet production (kg)	77.60
8	Revenue collected due to sale of piglets (Rs.)	77317.50
9	Sale price/piglet (Rs.)	1267.50
10	Profit/piglet (Rs.)	611.76
11	Profit/kg piglet production (Rs.)	72.40

CONCLUSION

Thus, it could be concluded from this study that Mizo local pigs (Zovawk) could perform efficiently under traditional housing and feeding system without any deleterious effect on overall breeding and growth performance. It could also be drawn out that traditional rearing system had positive effect on health and so mortality rate was significantly lower considering previous records pertaining to intensive housing system in the same location. This system of rearing was economical and profit margin was found to be wide.

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