Study on the growth performance and mortality in pre-weaning Burmese piglets reared under field condition of Aizawl, India

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ABSTRACT
The studies on the growth performance and mortality of Burmese piglets were conducted under the field condition in Aizawl district of Mizoram. The data of 35 male and 40 female piglets were studied for a period of 11 months (July 2009 to May 2010). The results revealed that sex had significant effect (P<0.05) on piglet body weight from birth till 8th week, males had higher body weight at all ages than females however the fortnightly body weight gain was higher in females than males; 155.85 gm and 168.60±0.01 gm in male and female respectively. For both male and female, fortnightly body weight gain increased from FN1 to FN2, however it declined from FN3 to FN4. Pre-weaning mortality percentage was found to be 21.33% and Classical Swine Fever was the main causes of mortality.

Key words: Burmese piglets, Growth performance, Mortality

INTRODUCTION
The highest tribal population (94.75 %) of Mizoram among the North Eastern states (Ali and Das, 2003) is one of the reasons for high demand of pork in the state. Aizawl, the capital of Mizoram enjoy cool temperate to Sub-tropical type of climate (Statistical Abstr., 2002-2003) which made different breeds of pigs favorable for rearing. The present pigs like Large White Yorkshire, Hampshire, Mizo local and their crossbreds could not suffice the demand in the state. This condition led to infiltration of pigs from adjoining states and country i.e. Myanmar and Bangladesh. Rearing of Burmese pigs gain popularity now a days. The increased demand of piglets and high market value of piglet (Rs. 3000-3500/piglet) has gained importance among the Mizo farmers. It is necessary to know the pre-weaning performance of pig as it is one of the major component of profitability in swine enterprise (Deka et al., 2002). However, lack of technical know-how led to high mortality and low growth rate in piglets. In order to overcome the constraints and considering the importance and need, the present study was undertaken covering Aizawl district of Mizoram.

MATERIALS AND METHODS
The study was carried out on 75 number of Burmese piglets reared in the field condition. They were randomly selected from different farmers in and around Aizawl district. The piglets were identified individually by plastic ear tags and were recorded. Body weight of a piglet was recorded by using suspension scale of 25 kg capacity at fortnightly interval (FN). Fortnightly body weight gain was calculated by the formula:

\[ \frac{W_2 - W_1}{t_2 - t_1} \]

where \( W_1 \) and \( W_2 \) are the initial and final body weight of the piglets for corresponding time unit as \( t_1 \) and \( t_2 \).

Dead piglets were collected from farmers and post mortem examination was carried out at the Department of Veterinary Pathology, College of Veterinary Sciences & Animal Husbandry, C.A.U, Selesih to study the causes of mortality. For confirmatory diagnosis of Classical Swine Fever, RCRL2 had collected the required samples and screened the same. The above data were statistically analyzed by using ANOVA as described by Snedecor and Cochran (1989).

RESULTS AND DISCUSSION
Fortnightly body weight of piglets from birth to 8th weeks: Fortnightly body weight of males were 1.20±0.05, 3.10±0.18, 6.38±0.34, 8.76±0.52 and 8.13±0.64 kg at birth, 2nd week, 4th week, 6th week and 8th week respectively. In case of females, they were 1.15±0.04, 3.22±0.16, 6.13±0.30, 8.56±0.47 and 9.46±0.65 kg at birth, 2nd week,
### TABLE 1: Piglet body weight (kg) from birth till 8 weeks at fortnightly interval

<table>
<thead>
<tr>
<th>AGE</th>
<th>Male N</th>
<th>Mean±SE</th>
<th>Female N</th>
<th>Mean±SE</th>
<th>Overall N</th>
<th>Mean±SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth</td>
<td>35</td>
<td>1.20±0.05&lt;sup&gt;a&lt;/sup&gt;</td>
<td>40</td>
<td>1.15±0.04&lt;sup&gt;b&lt;/sup&gt;</td>
<td>75</td>
<td>1.17±0.03&lt;sup&gt;*&lt;/sup&gt;</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Wk</td>
<td>29</td>
<td>3.10±0.18&lt;sup&gt;a&lt;/sup&gt;</td>
<td>30</td>
<td>3.22±0.16&lt;sup&gt;b&lt;/sup&gt;</td>
<td>59</td>
<td>3.31±0.12&lt;sup&gt;*&lt;/sup&gt;</td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; Wk</td>
<td>29</td>
<td>6.38±0.34&lt;sup&gt;a&lt;/sup&gt;</td>
<td>30</td>
<td>6.13±0.30&lt;sup&gt;b&lt;/sup&gt;</td>
<td>59</td>
<td>6.26±0.22&lt;sup&gt;*&lt;/sup&gt;</td>
</tr>
<tr>
<td>6&lt;sup&gt;th&lt;/sup&gt; Wk</td>
<td>29</td>
<td>8.76±0.52&lt;sup&gt;a&lt;/sup&gt;</td>
<td>30</td>
<td>8.56±0.47&lt;sup&gt;b&lt;/sup&gt;</td>
<td>59</td>
<td>8.66±0.35&lt;sup&gt;*&lt;/sup&gt;</td>
</tr>
<tr>
<td>8&lt;sup&gt;th&lt;/sup&gt; Wk</td>
<td>13</td>
<td>8.13±0.64&lt;sup&gt;b&lt;/sup&gt;</td>
<td>17</td>
<td>9.46±0.65&lt;sup&gt;a&lt;/sup&gt;</td>
<td>30</td>
<td>8.88±0.47&lt;sup&gt;*&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>*</sup>P<0.05 Means with different superscripts in a row differ significantly

4<sup>th</sup> week, 6<sup>th</sup> week and 8<sup>th</sup> week respectively (Table-1). From the observation, sex of piglets had significant effect (P<0.05) on body weight from birth till 8<sup>th</sup> week. Chhabra <i>et al.</i> (2005) also reported a significant effect of sex on body weight (from birth till 6<sup>th</sup> week) but non-significant at 8<sup>th</sup> week. In the observation, male piglets showed significantly heavier body weight than female piglets (from birth till 6<sup>th</sup> week) but lower at 8<sup>th</sup> week. This may be due to the fact that the male piglets were very playful and active which was a stress resulting in lowering the body growth of piglets during this period. The heavier weight of males over females was in agreement with Deo <i>et al.</i> (1981), Bardoloi and Raina (1984) and Chhabra <i>et al.</i> (2005). Contrary findings have also been reported by Chhabra <i>et al.</i> (1996). In 2002, Deka <i>et al.</i> also reported that sex has a significant effect on pre-weaning body weight and males were heavier than female.

#### Fortnightly (FN) body weight gain of male and female piglets:

The overall fortnightly body weight gain of males from FN-1 to FN- 4 was found to be 155.85 gm which was closed to the observation of Nath and Deka (2003<sup>a</sup>). In case of female, the overall fortnightly body weight gain was 168.60±0.01 gm but unlike male, the present value was higher than the findings of Nath and Deka (2003<sup>b</sup>). The present overall fortnightly body weight gain of both male (155.85 gm) and female (168.60±0.01 gm) were higher than the findings of Chauhan <i>et al.</i> (1993), Ehiobu <i>et al.</i> (2000), Sudhakar (2005) and Kumari <i>et al.</i> (2005).

#### Piglet mortality:

The mortality rate was found to be 21.33% which was comparable with the observation reported by Ehiobu <i>et al.</i> (2000), Nath <i>et al.</i> (2003<sup>b</sup>) and Pradeep <i>et al.</i> (2004). The high mortality rate may be due to lack of technical know how, poor managemental practices followed by the farmers of low economic status and also due to outbreak of Classical Swine Fever during the study period. The highest mortality percentage was observed due to Classical Swine Fever (14.67%) followed by Enteritis (2.67%), Starvation (2.67%) and Atresia Ani (1.33%). Most of the Burmese piglets were imported from Burma and were unvaccinated. This might have causes the spread of diseases like CSF leading to highest mortality in piglets. The present observation was not in agreement with Pathak <i>et al.</i> (2004) who however reported that the highest cause of pre-weaning piglet mortality is due to digestive disorders.

### TABLE 2: Fortnightly body weight gain (gm) of piglets

<table>
<thead>
<tr>
<th>FORTNIGHT</th>
<th>Male piglet</th>
<th>Female piglet</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Mean±SE</td>
<td>N</td>
</tr>
<tr>
<td>FN1</td>
<td>29</td>
<td>153.20±0.01&lt;sup&gt;A&lt;/sup&gt;</td>
</tr>
<tr>
<td>FN2</td>
<td>29</td>
<td>212.30±0.01&lt;sup&gt;A&lt;/sup&gt;</td>
</tr>
<tr>
<td>FN3</td>
<td>29</td>
<td>170.00±0.01&lt;sup&gt;B&lt;/sup&gt;</td>
</tr>
<tr>
<td>FN4</td>
<td>13</td>
<td>87.90±0.01&lt;sup&gt;B&lt;/sup&gt;</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100</td>
<td>155.85±0.01&lt;sup&gt;B&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>A, B</sup> P<0.01 Means with different superscripts in a row differ significantly
REFERENCES


