EFFECT OF EARLY WEANING ON BEHAVIOURAL PATTERNS IN PIGLETS

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ABSTRACT

In a completely randomized design, three groups of crossbred (LWY x Desi) piglets weaned at different ages were tested to study the playing, fighting, tail biting and lying behaviours. The weaning age for the first, second and third (control) groups were 36, 46 and 56 days, respectively. The tail biting and playing were more for early weaned piglets. Late weaned piglets showed more fighting behaviour for the control and non-significant differences were found in the time spent for lying among three groups. Growth rate ($P<0.01$) and ADG were higher for the control group where as the early weaned piglets showed better feed conversion efficiency than others. It was concluded that late weaned piglets showed better growth rate, ADG as compared to early weaned and a reverse trend was noticed for feed conversion efficiency.

Key words: Segregated early weaning, behaviour patterns, ADG, FCR

INTRODUCTION

Though swine industry exhibits little contribution to the national economy, the practice is present in India over centuries. Swine rearing in India is carried out under variety of adverse social, climatic and environmental conditions. India possess one percent of world population accounted for 16.5 million heads (FAO 2001) Hog industry has remained undeveloped mainly due to religious taboos and prejudices. Swine rearing in our country is mainly in the hands of the socially and economically weaker, illiterate people. The unscientific breeding practices and unhygienic management of pigs also paved the way for the industry in primitive stage. The two reasons attributed for the poor growth of commercial hog industry are that pigs are not generally used for meat purpose by majority of the meat consumers in India and that pigs compete directly with human beings for cereal grains Under the practical farming conditions, piglets are usually weaned at 8 weeks of age. But early weaning is also practiced to obtain some advantages like early rebred of sow and to lessen the weight loss of the sow during lactation. There is a complete control of nutrient supply to the pig in early weaning; pigs are more uniform, heavier and healthier and better control of the diseases in the herd is possible.

MATERIALS AND METHODS

Three groups of animals each comprising of 12 piglets from three different sows with similar litter size in each group were weaned at 36, 46 and

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Effect of early weaning ....

Parameters studied are birth weight, weaning weight, body weight at weekly intervals, growth rate, average daily gain, daily feed intake and feed conversion efficiency. The effect of early weaning at different ages on the behavioural traits of piglets was studied for 20 days. The piglets were housed in the adjacent pens to record the observations easily and each pen consists of 6 piglets. The behavioral pattern of the piglets in each pen was observed for 15 minutes during each three hour intervals. Four observations were made at 9, 12, 15 and 18 hours. Care was taken that natural behaviour of the piglets during the study period was not disturbed.

**Playing**
The behaviour was observed when playing by biting their companions, scratching their own bodies, pushing etc.

**Fighting**
This behaviour was observed as a group of behavioural adjustment associated with fighting including attack, escape, threat, defence and this fighting behaviour was due to conflict with another animal.

**Tail biting**
Tail biting behaviour was considered as a vice and was present only with one or two piglets.

**Lying**
The time spent by piglets on lying either on lateral or ventral recumbency or huddling among piglets were observed.

**Recording of growth rates**
Piglets were weighed soon after they were born. Weaning weight of three groups of piglets were weighed at the time of weaning i.e., on 36th day, 46th day and 56th day for 1st, 2nd and 3rd groups, respectively.

**Average Daily Gain**
The daily weight gain of each piglet was calculated by using the formula Pandey *et al.* (1996)

\[
ADG = \frac{W_2 - W_1}{T_2 - T_1}
\]

*W*<sub>1</sub> and *W*<sub>2</sub> are the initial and final body weights of the piglets for a particular period

*T*<sub>1</sub> and *T*<sub>2</sub> are the corresponding time units

**Daily Feed Intake**
A known quantity of feed was provided in the morning and evening in each pen and the left over feed on the next day morning was collected and weighed to determine the daily feed intake in kg. The dry matter intake was calculated.

**Feed conversion efficiency**
It was calculated by dividing the dry matter consumed with the body weight gained in kg.

**RESULTS AND DISCUSSION**
The time spent for playing was found to be more for early weaned pigs that of late weaned piglets. However there is no statistical significance between the groups. From the table 1, it is clear that the timer spent for fighting between the individuals in the groups was more in the higher weighed piglets.
### Table 1. Showing behavioural patterns and growth rates among different groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Feed Conversion efficiency</th>
<th>ADG (Kg)</th>
<th>Daily Feed Intake (kg)</th>
<th>Birth weight (Kg)</th>
<th>Weaning weight (Kg)</th>
<th>Growth rate (Kg)</th>
<th>Playing (min)</th>
<th>Fighting (Min)</th>
<th>Tail biting (Min)</th>
<th>Lying (Min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>3.92±0.59</td>
<td>0.98±0.24</td>
<td>3.49±0.52</td>
<td>1.12±0.03</td>
<td>5.92±0.25</td>
<td>10.8±0.22</td>
<td>110</td>
<td>25</td>
<td>50</td>
<td>10</td>
</tr>
<tr>
<td>II</td>
<td>4.11±0.66</td>
<td>1.22±0.45</td>
<td>5.17±0.60</td>
<td>1.07±0.04</td>
<td>6.32±0.33</td>
<td>15.3±0.90</td>
<td>90</td>
<td>32</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>III</td>
<td>4.81±0.42</td>
<td>1.48±0.22</td>
<td>5.98±0.45</td>
<td>0.98±0.03</td>
<td>6.66±0.04</td>
<td>19.2±0.45</td>
<td>75</td>
<td>45</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

ab Values in a row not sharing common superscripts differ significantly **(P<0.01)**

*i.e.* the piglets weaned at 56 days of age (control). Females were more aggressive than males.

It is evident from the table that early weaned piglets spent more time in tail biting than the rest of the groups. Non significant difference was found in the time spent for lying among the 3 groups. All the piglets spent almost similar time in lying.

Growth rate was higher for the control group (19.22kg) as compared to 1st (10.84 kg) and 2nd (15.33kg) groups, respectively and because of higher weaning weights which correlate with Pandey *et al.* (1996) and Wolter *et al.* (2002) who reported that the post weaning daily weight gain was increased proportionately. The daily feed intake for the control group was higher due to the biological and physiological needs of the piglets in their rapid growth phase. This was in accordance with Hansen *et al.* (1980) who reported that large weight group piglets consumed higher feed.

Average daily gain recorded for the control group was higher than the test group of piglets weaned at early age. In order to meet the biological needs, to achieve the maximum growth, the large weight groups would have consumed more dry matter and could convert them into gain (Kiariie *et al.* (2007)).

Feed conversion efficiency was low for the early weaned piglets than the piglets weaned at a later date due to the simple reason of Segregated Early Weaning (SEW). Playing behaviour was observed more in the early weaned piglets than the other groups which correlate with the findings of Patersen *et al.* (1995) who said that early weaned male piglets play more than others that are weaned late.

**Fighting behaviour** was more in the females than that of males which coincide with Rushen (1988) and Biswas and Pan (1995) due to the interaction of hetero sex groups of piglets.

Tail biting behaviour was more in early weaned piglets as compared to the other groups as these are more sensitive for confinement in pens.
and bedding because bedding and confinement in pens have influence on tail biting which is a harmful social behaviour.

Lying tendency was more in heavy weight piglets than the others because of more body weight which correlate with Ewbank and Meese (1971)

**Daily feed intake**

As the age advances from the first week to 8th week, the daily feed intake was increased among the three groups of animals with out any significant differences among them.

**Average Daily Gain.**

Control group of animals have shown increased ADG as compared to the other two with no significant difference among the groups.

**Feed conversion efficiency**

The early weaned piglets showed better feed conversion efficiency than the other two. The reason being segregated early weaning (SEW).

**REFERENCES**


