GROWTH PERFORMANCE OF CROSSBRED (LWY X DESI) BARROWS UNDER DIFFERENT FLOOR SPACE ALLOCATIONS

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ABSTRACT

The effect of floor space allocation on growth rate and feed intake of crossbred barrows from 5th to 9th month of age was investigated. Three treatment groups with a floor space of 1.0 m² (T₁), 1.2 m² (T₂) and 1.8 m² (T₃) per pig were maintained and each group contains seven pigs and monthly body weight and feed intake were recorded. Significant difference (P< 0.05) between T₁ and other two groups (T₂ and T₃) was observed with respect to body weight. Significant reduction in body weight (kg) at 9 months of age was observed in T₁ group as compared to T₂ and T₃ groups. Statistically no significant difference was observed among the treatment groups (T₂ and T₃). But, body weight gain and average daily gain recorded were highest in T₂ (1.2 m²/pig) group. Hence, it was concluded that 1.2 m² floor space/pig proved to be an optimum for finisher pigs to produce better growth rate.

Key words: Average daily gain, Body weight, Crossbred pigs, Floor space, Growth performance.

Housing of pigs depends upon the system of farming, which may vary according to the prevailing environmental conditions of the region and financial status of the farmer. The number of pigs (group size) and floor space per pig (stocking density) are key factors in designing the houses. Over-crowding results in decreased growth rate which would ultimately lead to serious health problems. On the other hand, excessive floor space allocation per pig increases the housing cost thereby escalating the production cost. Hence, the floor space allowance is one of the important variables in commercial pork production and for lowering the cost of housing in rural areas. Earlier studies on effect of floor space allocation on growth performance in pigs were mostly done in temperate countries with controlled micro-environment and also limited to grower or fattener pigs. Hence, this study was planned to find out the effect of different floor space allowances on growth performance of 75% crossbred pigs under sub-tropical climatic condition.

A total of 21 number of 75% crossbred (Large White Yorkshire x Desi) pigs maintained under All India Coordinated Research Project (AICRP) on Pigs at Pig Breeding Unit of Livestock Research Station, Kattupakkam, Tamilnadu were randomly allotted to three different groups each of seven pigs with a mean body weight of 45.38 ± 1.42 kg at 5 month of age. Pigs were maintained without any floor space restriction up to 5 months. The pigs were reared under intensive system of management with concrete floor sheds in three separate pens. This experiment was carried out for 120 days and monthly body weight of pigs were recorded. All the pigs were fed with grower ration and had access to clean drinking water throughout the study. Equal quantity of concentrate feed (grower ration comprised of maize 45 parts, de-oiled rice bran 30 parts, groundnut cake 17 parts, fish meal 7 parts, mineral mixture 2 parts and common salt 0.5 parts) was given to pigs in all the treatments. No mortality was observed during the period of experiment. The monthly body weight (kg), total weight gain (kg) and average daily gain (g/day) were calculated and data were subjected to test of significance as per Snedecor and Cochran (1967).

The mean monthly weight (kg), total body weight gain (kg) and average daily gain (g) of 75% crossbred barrows maintained under different space allocations are presented in Table 1. The average 5th
TABLE 1: The mean monthly weight (kg), total body weight gain (kg) and average daily gain (g) of 75% crossbred barrows maintained under different space allocations.

<table>
<thead>
<tr>
<th>Treatment groups</th>
<th>5th month</th>
<th>6th month</th>
<th>7th month</th>
<th>8th month</th>
<th>9th month</th>
<th>Total body weight gain (kg)</th>
<th>Average Daily Gain (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T₁</td>
<td>45.14 ± 3.17</td>
<td>52.43 ± 3.41</td>
<td>61.43 ± 3.53</td>
<td>70.29 ± 3.91</td>
<td>79.71 ± 4.48</td>
<td>34.57 ± 3.88</td>
<td>290.00 NS ± 3.65</td>
</tr>
<tr>
<td>T₂</td>
<td>45.93 ± 1.91</td>
<td>56.00 ± 3.30</td>
<td>64.00 ± 3.61</td>
<td>78.43 ± 4.14</td>
<td>89.29 ± 5.26</td>
<td>43.36 ± 3.74</td>
<td>360.00 NS ± 3.45</td>
</tr>
<tr>
<td>T₃</td>
<td>45.29 ± 1.80</td>
<td>59.71 ± 2.97</td>
<td>64.00 ± 2.99</td>
<td>76.57 ± 3.66</td>
<td>85.71 ± 4.16</td>
<td>40.42 ± 3.65</td>
<td>340.00 NS ± 3.25</td>
</tr>
</tbody>
</table>

and 9th month body weights were 45.14 ± 3.17, 45.93 ± 1.91 and 45.29 ± 1.80 kg; and 79.71 ± 4.48, 89.29 ± 5.26 and 85.71 ± 4.16 kg for T₁, T₂ and T₃ groups respectively. There was a significant (P < 0.05) difference between T₁ and other two groups (T₂ and T₃) with respect to body weight gain; but no significant difference was existed between the treatment groups with respect to average daily gain. It was observed that reduction of floor space to 1.0 m²/pig resulted in decrease in body weight at 9th month of age; which is in agreement with Gehlbach et al. (1966), Randolph et al. (1981), Sharma et al. (2004) and Yedukondalu et al. (2006) who worked on Large White Yorkshire grower, Hampshire X Large White Yorkshire crossbred grower, Hampshire and Desi X LWY crossbred grower pigs respectively.

The total body weight gain and average daily gain for T₁, T₂ and T₃ groups were 34.57 ± 3.88, 43.36 ± 3.74 and 40.42 ± 3.65 kg; and 290 ± 3.65, 360 ± 3.45 and 340 ± 3.25 g respectively. The average daily gain was the lowest in T₃ group due to reduced space allowance during finishing period. This observation was in concordant with the findings of Wolter et al. (2003) was observed that decrease and increase in growth rate of grower – finisher period of crossbred pigs (Ausgene Line 5 sires × Ausgene Line 13 dams) was due to restricted floor space and provision of adequate floor space respectively.

Though, there is no statistically significant difference between T₂ and T₃, highest body weight gain and ADG were observed in T₂ (1.2 m²/pig) group. This might be due to more feeding activity than exploring activity by barrows in T₂ group. Meunier-Salaun et al. (1987) observed that pigs reared in minimal floor space spent more time on feeding activity than on exploring activity. They also interpreted that minimal floor space allocation may reduce the behavioural expression of social activities due to physical constraints and induces a breakdown in communication, so that pigs would adopt a “social avoidance” strategy. In the present study, there was no abnormal aggressive behaviour observed between the groups.

CONCLUSION
Floor space of 1.2 m²/pig was found to be optimum to crossbred pigs during grower-finisher stage, without compromising the weight gain.

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