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Dirt Score in Large White Yorkshire Piglets during Preweaning Period Reared on Cement Concrete Floor

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ABSTRACT: An experiment was carried out on 24 Large White Yorkshire piglets of either sex at the pig unit of LFC of C.V.Sc., Rajendranagar, Hyderabad from birth to weaning. All experimental piglets were reared on normal conventional concrete flooring along with their mother till weaning (56 days). An evaluation of cleanliness (dirt scoring) was performed fortnightly during the experimental period. Pig cleanliness was assessed using a fivepoint scale on 4 anatomical areas: rear, back, and both flanks, and each area was given a score from 0 to 4. The observed fortnightly dirt score was 0.56 ± 0.03, 0.60 ± 0.02, 0.70 ± 0.02, and 0.97 ± 0.11 at first, second, third, and fourth fortnight respectively. There was a continuous increase in dirt score as the age advances. Statistical analysis revealed the mean dirt score at the fourth fortnight was significantly ($P<0.01$) different from the first, second, third, and overall mean dirt score.

KEYWORDS: Cement Concrete Floor, Dirt Score, Large White Yorkshire Piglets, Preweaning Period.

1. INTODUCTION

Large White Yorkshire is a large sized and most extensively used exotic pig breed in India. In recent years there has been a growing concern about animal welfare due to the undesirable consequences on general productivity performance (Miro *et al*., 2016). Animal welfare, among other things, depends on the type of floor in their housing (Mills *et al*., 2010). A dirt score is a good general indicator of hygiene status. Dry feet have greater integrity than wet and the hoof horn and the barrier of the skin between and above the claws in dry feet are intact reducing the chances of bacteria invading the tissue. In wet conditions, slurry and water soften the horn and weaken or even disrupt the skin barrier; slurry may also corrode the horn. Lesions associated with exposure to slurry are digital dermatitis and heel erosion (Rantzer and Svendsen,2001). As the early stage of a young animal's life is very important, the provision of the proper flooring will keep the piglets healthy and ensure optimum growth. Proper flooring management and design are critical for better health care, longevity, comfort, and increased productivity. A balance must exist between animal comfort and well-being, cleanliness, and feed digestibility and efficiency.

2. MATERIAL AND METHODS

The present study was undertaken at the pig unit of Livestock Farm Complex (LFC). Two weeks before farrowing, three advanced pregnant sows were transferred to the farrowing pen with creep area. After farrowing, 24 day old Large White Yorkshire piglets of either sex from three litters were selected from the pig unit of LFC of C.V.Sc., Rajendranagar and reared on normal conventional concrete flooring along with their mother till weaning (56 days). All the piglets during the preweaning period were housed under conventional housing with concrete floor along with their mother provided with a floor space of 9 m^2 / sow in the covered shed with asbestos roof. The experimental piglets were ear notched for proper recording of the data. The needle teeth of the piglets were cut on the birth day. All the piglets were injected with iron dextran (Ferrextran 100 @100mg/piglet) on the 4th day and

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14th day and vitamin A (Vetinol -A @ 3 Lakh I.U./kg body weight) on the 14th day of the experiment. Creep feed as per ICAR (2013) was provided to piglets during the preweaning period once a day *ad-libitum* in the creep area from the 21st day of age.

An evaluation of cleanliness (dirt scoring) was performed fortnightly during the experimental period. Pig cleanliness was assessed using a five-point scale on 4 anatomical areas: rear, back, and both flanks, and each area was given a score from 0 to 4, according to the following criteria suggested by (Minvielle and Le Roux, 2009). The evaluation of cleanliness was performed by the same person to avoid individually subjective differences.

Table 1. Evaluation of dirtiness (cleanliness) score

Score	Visual scoring of cleanliness
0	No visual contamination
1	< 25% of the surface considered dirty
2	25 to 50% of the surface considered dirty
3	50 to 75% of the surface considered dirty
4	> 75% of the surface considered dirty

3. RESULT AND DISCUSSION

The observed fortnightly dirt score was 0.56 ± 0.03, 0.60 ± 0.02, 0.70 ± 0.02, and 0.97 ± 0.11 at first, second, third, and fourth fortnight respectively. There was a continuous increase in dirt score as the age advances and is in agreement with the findings of Rantzer D and Svendsen J. (2001). Statistical analysis revealed the mean dirt score at the fourth fortnight was significantly ($P<0.01$) different from the first, second, third, and overall mean dirt score. The dirt score at first, second, and third fortnight was comparable to each other. The overall mean dirt score during the preweaning period was 0.71 ± 0.03 and it was comparable with the dirt score at first, second, and third fortnight.

Table 2 Mean ± SE values of fortnightly dirt score of LWY piglets during the preweaning period

Floor type	Dirt score				Overall mean dirt score
	F1	F2	F3	F4	
Cement concrete	0.56 ± 0.03^{b}	0.60 ± 0.02^{b}	0.70 ± 0.02^{b}	0.97 ± 0.11^{a}	0.71 ± 0.03
N	24				
SEM	0.027				
P Value	0.000				

Means with different superscripts row-wise differ significantly: $P<0.01$.

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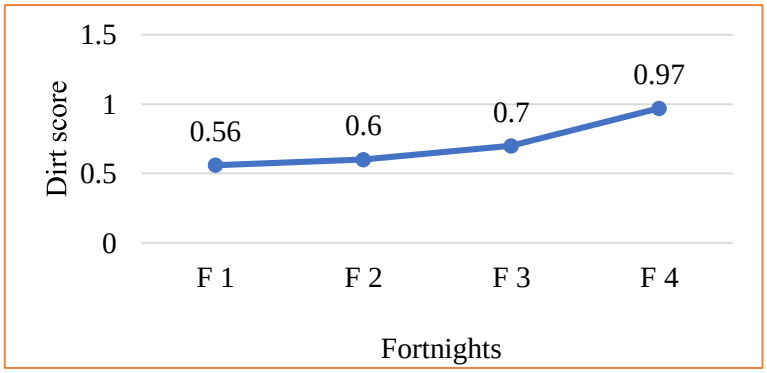

Fig. Dirt score of LWY piglets during the preweaning period

4. CONCLUSION

There was a continuous increase in dirt score as the age advanced from birth to weaning.

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