

**NSAP****47th Annual
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(JOS 2022)****CONFERENCE
PROCEEDINGS**THEME
**SECURING ANIMAL
AGRICULTURE AMIDST
GLOBAL CHALLENGES****THE INFLUENCE OF FLOOR TYPES ON SKIN LESION SCORE OF CROSSBRED
WEANED PIGS****¹Ogunbode, A.A., ²Abegunde, P.T., ³Faleye, M.A and ⁴Adejumo, F.A****^{1,3}Department of Animal Production Technology****²Department of Animal Health Technology****⁴Department of Animal Health and Production****Faculty of Animal and Fisheries Technology****Oyo State College of Agriculture and Technology, Igboora, Nigeria****aaogunbode@gmail.com****+2348062455318****ABSTRACT**

An eight weeks experiment was carried out to investigate the skin lesion score of eighteen (18) weaned pigs separated into three treatments with three replicates each in a completely randomized design. The treatments include three different floors of concrete, slatted and straw. The concrete floors were constructed using cement, gravel, sand and water; the slatted floor were made of wooden plank while the straw floor were made of maize stalk. The result for skin lesion for the different parts observed revealed that pigs kept on straw floors recorded the highest occurrence of parasitic infection and raised bristle (150.00%, 99.00%) respectively. For bruises pigs sustained on concrete and slatted floors recorded the same value (1.33%) while pigs on straw floor had no occurrence of bruises as a result of succulent nature of maize stalk used as bedding. It can be concluded that raising pigs on slatted floor as alternative bedding materials for pigs is beneficial as it reduces the occurrence of parasitic infection and other skin lesion on the skin which may reduce the quality of the skin and carcass quality of pigs.

Keywords: Floors, lesion, pigs, skin, weaned**INTRODUCTION**

The challenge for any swine production is to meet the demand of environmental sustainability while providing the animals the quality physical environment for enhanced well-being and thus productivity (Oliveira, 2000). Pork is the second consumed meat in the world (Agricultural output, 2020). Pig production has a very wide range of rearing methods (Degree *et al.*, 2007) with conventional pig production in closed buildings, the currently dominant system. The demand for pork products in the future may change and be strongly influenced by socio economic factors including animal health concerns. Various actions by animal welfare associations indicate that the current dominant production system is becoming less acceptable especially with regard to animal welfare (Kanis, *et al.*, 2003). It is in this context and with the growing markets for pork raised in more natural conditions, an alternative to the conventional systems are being developed. The continued effort to address the environmental and animal welfare issues has led to a growing interest in exploring alternative housing systems in swine productions (Gentry *et al.*, 2001). The use of deep beddings in pig production is increasing as it facilitates and reduces the cost of waste management, it improves the physical comfort of the floor, functions as crucial motivation and outlet for exploration behaviours (Tuytens, 2005). The skin is one of the first systems affected when an animal becomes sick so it is important for anyone working with animals to have a sound



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knowledge of the structure and functioning of the skin so they can quickly recognize signs of disease. The skin is the largest organ of the body accounting for about 10-12% of body weight in piglets at birth and up to 7% in adult pigs (Cameron, 2012). It serves as the first line of defense against external physical, chemical and biological attackers which makes it prone to a number of diseases. The skin also plays a role in the thermoregulation and prevention of excess water loss from the body. It has a complex structure being composed of many different tissues. It affords mechanical protection of the soft tissues and also acts as a barrier against infection and physiological stresses encountered in its habitat. The objective of the study is to compare the effects of conventional system with the alternative deep bedded floors on the skin lesion of crossbred weaned pigs

MATERIALS AND METHODS

Experimental site

The experiment was carried out at the piggery unit of the Teaching and Research Farm of the Oyo State College of Agriculture and Technology, Igboora, Nigeria.

Experimental animal and management

Eighteen (18) crossbred (Large white x Landrace) weaned pigs with an average weight of 9.0kg were used for the study and obtained from the piggery unit of the Teaching and Research Farm of the Oyo State College of Agriculture and Technology, Igboora. The pigs were dewormed and fed 4% of their body weight as feed per day at the beginning of the experiment and increased as the animals increased in age while water was supplied *ad libitum*. The animals were kept and monitored for one week of acclimatization before the commencement of the experiment. The experiment lasted 56 days (eight weeks). Experimental diet was formulated to meet the nutritional requirements of the animals.

Animal housing

Three pens was constructed using wooden planks and the roofing was made of iron sheet. The floors were made of concrete, straw and slatted. The concrete floors were constructed using cement, gravel, sand and water while the straw floor was made of maize stalk. Slatted floor with a slatted gutter at the lower end were constructed. The pens were cleared daily by washing down the floor with broom, water and manure were collected in the gutter and flushed into a pit. The pigs were housed in the pens equipped with individual drinking and feeding facilities, the pen used were constructed with wooden planks in an open sided gable roof building. One kilogram straw was placed in each pen before the arrival of the pigs. Additional supply of 1kg straw was offered every two days. Waste straw and manure were removed daily.

Data collection

For the purpose of skin lesion evaluation, the body of the pigs was divided into three parts: each part received a score based on the number of lesions on it. The parts of the body assessed were: (1). Front (head, neck, shoulder and front legs) (2): middle (flanks and back) and (3): rear (rump, hindlegs and tail). Direct observation of the skin following the checklist of Bjorklund (2005) was used to keep the scores consistent throughout the experiment.



Statistical analysis

All data obtained were subjected to analysis of variance using SAS (2012) Software. Means were separated using Duncan’s Multiple Range Test of the same statistical software.

Results and discussion

The results of crossbred weaned pigs maintained on concrete, slatted and straw floors are presented in Table1. There were significant ($p < 0.05$) differences in all the values obtained across the dietary treatment. Pig raised on straw floor had higher incidence of parasitic infection (150.00%) while the values obtained for pigs kept on concrete and slatted floors were 27.33% and 26.00% respectively. Merck Veterinary Manual (2014) reported that parasitic infestation has the potential to cause detrimental effect through increased cost of maintenance of farm infrastructure due to persistent rubbing and scratching, reduced feed conversion ratio and growth rate. For raised bristle, pigs on straw floor recorded the highest value (99.00%) while pigs on concrete floor (8.33%) and slatted floor recorded (0.67%) respectively. The higher value of raised bristle recorded for pigs on straw floor might be as a result of the pigs having contact with their excreta which may affect the skin quality. Pig kept on concrete and slatted floors recorded the same value of (1.33%) of bruises while there was bruises on the pigs raised on straw floor which might be as a result of succulent form of maize stalk used as bedding materials. The interaction between effect of the environment and the animal, herd size, stocking density, age, weight of pig, floor material, feeding regime, health status, genetic and management has been advocated to reduce the bruises on the animals. Mange is a parasitic disease of the skin caused by mite sarcoptic scabies. Grahofer *et al.*, (2018) opined that sarcoptic mange results in skin lesions and discomfort for the animal particularly around the eyes, snout, ears and hocks. Intense itching is an important clinical signs associated with mange infestation. Parasitic infestation can impact on production with reduced growth rates and poor feeding efficiency with reduction in growth rates of 4.5-12% possibly affected the pigs. Laha, (2015) reported that the spread of mange were found to be more in pigs kept on straw bedding. The common clinical signs of infection are ear shaking and severe rubbing of the skin against the sides of the pen. The skin becomes sensitized to the mite protein and a severe allergy might develop 3-8 weeks after infections with very tiny red pimples covering the whole of the skin causing intense irritation, head shaking, the appearance of bare patches and possibly bleeding, caused by rubbing. As the infestation progresses the skin becomes thickened, crusted with exudates and secondarily infected due to damage caused by host scratching.

Table 1: Feed composition of experimental diet

Ingredients	(kg)
Maize	35.00
Corn Bran	25.00
Palm Kernel Cake	25.00



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Groundnut Cake	7.00
Bone Meal	3.00
Fish Meal	3.00
Salt	0.50
Lysine	0.50
Methionine	0.50
Premix	0.50
Total	100.00
Calculated analysis	
Metabolize energy (Kcal/Kg)	2850.00
Crude protein (%)	20.00

Table 2: Comparative effect of skin condition of crossbred weaned pig on concrete, slatted and straw floors

Comparative Analysis	Concrete T1	Slatted T2	Straw T3	SEM
Parasitic infection (%)	27.33	26.00	150.00 ^a	0.47
Raised Bristle (%)	8.33	0.67	99.00 ^a	2.71
Bruise (%)	1.33	1.33	0.00 ^b	0.00

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