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Sow and piglet skin, claw and nipple lesions on two concrete flooring materials during lactation period

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Flooring can actually wound pigs especially during farrowing period. Nursing piglets and lactating sows are especially sensitive to the flooring material. During nursing, the piglets' knees are pressed against the floor as support for their vigorous nursing activity. This can cause bleeding wounds on the piglets' knees. Lactating sows often lose weight due lactation and easily get wounds on their shoulders owing to extensive lying. The aim of the study was to investigate the skin, claw and nipple lesions of sows and their piglets while they were kept on two different flooring materials: concrete cement and concrete covered with polyurethane and graveled with sand (particles 0.5 – 1.2 mm).

We evaluated a total of 24 lactations (13 vs. 11). The sows were Landrace and Landrace x Yorkshire of parities 1 or 2. The experiment took place in 4 concrete and 4 polyurethane covered pens where the sows were moved before parturition. The pens were standard farrowing pens with cages, partly slatted floors and nest boxes with heating lamps for the piglets.

Skin lesions on the sows were measured twice: when they entered the experiment around parturition time and at the time of weaning (approximately days 21-28). The severity of lesions was scored according to the following scale: 1 = skin affected but not wounded (redness or thickening), 2 = wounded or destroyed skin. The size of the lesions was measured in two directions with a ruler. In addition, nipple lesions were recorded.

The piglet measurements were made in the middle of the lactation period (days 5-12 postpartum) and in the end (days 21-28). Piglet skin lesions were measured on the front knees and seplocks. Recordings of the number of injured or affected claw halves and damaged nipples were taken. Piglets were also weighted.

Only 7 of 230 piglets were healthy in terms of skin lesions. More wounded hoofs were found at the end of the experiment on sand coating than on concrete (3.8 vs. 11.0, Mann-Whitney test, $P=0.004$). This could be due higher roughness of sand graveled coating compared to concrete (average peak height 0.35 mm vs. 0.49 mm, Mann-Whitney test, $P=0.03$). Despite the different quality of flooring there was no difference in amount of skin or nipple lesions.

The number of piglets affected the proportion of nipple lesion on sows ($F= 7.50$, $df =1$, $P=0.015$, univariate analysis). The more piglets the sow had the more nipple lesions it developed. No correlation between daily weight gain and nipple wounding was found. The number of piglet lesions remained constant (average 32 lesions per litter) but the lesions healed considerably since the number of more severe lesions decreased ($P< 0.001$, t-test) from first observation to second and the number of less severe lesions ($P< 0.001$, t-test) increased from first observation to second. Lesions did not affect the daily weight gain.

There was no difference in lesions between the materials except for the claw lesions. The skin lesions of piglets healed towards the end of lactation period.