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Correlation between mounting activity and leg injuries in sows housed in groups after weaning

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Since 1997, Danish pig producers have been able to obtain a premium for their pork for the UK market if engaging in branded production. One of the requirements for this production is that sows must be loose-housed from weaning until farrowing. However several studies conducted by the Pig Research Centre have shown that young sows in particular that are housed in groups after weaning have reduced reproductive performance. For instance, Hansen and Jensen (2005b) showed that young sows gave birth to 0.6 more total born piglets per litter if they were housed in homogenous groups compared with young sows housed in heterogeneous groups with sows of mixed parity. In addition, sows weaned into loose groups had a higher frequency of leg problems compared with sows that were confined during oestrus (Hansen and Jensen, 2005a).

The aim of the current study was first to investigate the correlation between mounting activity and leg problems in sows housed in groups after weaning, and second, to examine if older sows mounted more than younger animals. Our hypotheses were first, that a positive correlation would exist between mounting activity and leg injuries and second, that older sows would mount more compared with younger sows.

A total of 921 sows (Landrace × Yorkshire) in three different piggeries with group housing from weaning until farrowing were included in the study. The group size varied between the different piggeries. In herd A the sows were housed in groups of 20, in herd B the group size was 25 and in herd C there were 50 animals in a group. In all herds the mating units had free access eating and inseminating stalls, a non-slippery floor in the activity area (approximately 25 cm straw bedding) and an area per sow of 4 m² including the stalls. All sows were loose from weaning and assessed for leg injuries on d 3 using visual gait scoring. Only sows with no leg injuries on d 3 were included in the study, meaning that leg injuries that occurred due to mixing and establishment of the hierarchy were not included. These animals were removed from the group and housed elsewhere in the herd. On d 4 and 6 after grouping the mounting activity was recorded for all sows from 0900 to 1200 and again from 1300 to 1500. Mounting activity included mounting and mounting attempts and the frequency was recorded continuously during the two observations periods. A mount or mounting attempt was recorded when an animal placed the head or at least one leg on the back of a group member. On d 7 after grouping, the sows were again evaluated for leg injuries based on gait.

Collected data were analysed using logistic regression in SAS (version 9.2), and sows in the same group were considered as replicates. Using logistic regression it was examined if herd, sow parity and day of recording (d 4 or d 6) were related to the number of mountings. Leg problems on d 7 were evaluated using the same logistic regression approach but with the addition that the number of delivered and received mountings were included as explanatory variables.

Contrary to our hypothesis there was no correlation ($P=0.786$) between sows involved in mounting activities (both delivering and receiving) on d 4 and d 6 on leg injuries at d 7 after weaning. Furthermore there was no link ($P=0.606$) between parity of the sow and leg injuries on d 7. A total of 10% of the sows had leg problems recorded on d 7. Nonetheless it has to be acknowledged that sows with leg injuries that occurred before d 3 were not included in this study as the focus was on mounting behaviour and not aggression *per se*.

However, as expected sows of parity 3 or higher mounted more than younger sows ($P=0.033$). In relation to sows that were mounted, there was no correlation with parity ($P=0.214$). In addition, more than twice as many sows ($n=314$) were mounting on d 6 compared with d 4 after weaning ($n=136$) ($P<0.001$). Of the sows that were studied on d 4 and d 6 after weaning, 26% did not participate in mounting behaviour, 43% were involved in mounting on one of the days, and 31% took part in mounting on both days.

In conclusion, this study failed to show a correlation between mounting behaviour and leg injuries in sows during/over the first week after weaning under loose-housing conditions.

HANSEN, L.U. and JENSEN, H.K. (2005a). www.vsp.lf.dk. Report no. 697.

HANSEN, L.U. and JENSEN, H.K. (2005b). www.vsp.lf.dk. Report no. 698.

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