

Risk factors associated with skin and vulva lesions in Danish loose-housed gestating sows and gilts

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This cross-sectional study investigated risk factors associated with the pen-level prevalence of skin and vulva lesions in loose-housed gestating sows and gilts in Denmark. Twenty-one conventional herds with more than 200 sows were visited from April to December 2015. Herds were chosen by convenience sampling and pens and animals were selected according to the Welfare Quality protocol. Associations between the proportion of animals in a pen with skin or vulva lesions and selected pen characteristics were analysed using univariable generalised linear mixed models with a negative binomial response and herd and pen as random effects. A multivariable model was not used due to moderately high confounding between pen characteristics. Of the 657 sampled animals from 121 pens, 210 (32%) had skin lesions, whereas 63 (10%) had vulva lesions. Skin and vulva lesions occurred with a corresponding frequency in the same animal ($n=20$, 3%), as expected if occurring independently. The risk of skin lesions was higher in pens with: electronic feeding compared to individual feeding stalls with rear gates ($OR=3.0$, 95% CI: 1.5-6.2), groups of >60 animals compared to groups of 8-20 animals ($OR=2.7$, 95% CI: 1.3-6.2), and recently mixed stable groups compared to stable groups ($OR=2.2$, 95% CI: 1.1-4.1). The risk was lower in pens with gilts compared to mixed groups ($OR=0.2$, 95% CI: 0.0-0.7) and tended to be lower in pens with maximally two handfuls of straw compared to no rooting material ($OR=0.4$, 95% CI: 0.1-1.0). The risk of vulva lesions was higher in pens with >60 animals compared to 8-20 animals ($OR=4.4$, 95% CI: 1.2-19.0). The results suggest that occurrence of skin and vulva lesions may have different aetiologies. Further research is needed to uncover the effects of pen design, feeding system, rooting material, group dynamics and size on skin and vulva lesions.