

1C-101: Physical and nutritional interventions to reduce sow lameness

Experiment 1: The relationships of locomotion disorders and specific foot lesions with sow productivity and progeny performance.

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Aims and Objectives

Lameness is a substantial contributor to the premature culling of sows. This represents a significant cost impost to the industry and is a welfare issue, and as such, we need to improve our understanding of those factors that can be used to prevent the incidence of sow lameness in a wide variety of environments.

This project was undertaken to establish the magnitude of locomotion disorders associated with specific foot lesions in an Australian herd and to quantify their impacts on sow reproductive outcomes. The genetic contributions to sow lameness and feet soundness were also examined.

Key Findings

The incidence of post-mating lameness (score of 2 or more) was about 7% over the time period of recording, while the assessment for foot health revealed over 90% of sows were observed with at least one lesion.

Lesion scores were generally not significantly associated with lameness unless moderate in severity, which was not common, and therefore did not have a strong association with subsequent reproductive performance. There was also no evidence that post-mating lesions were associated with subsequent culling, suggesting these measures of foot health was generally not a strong predictor of imminent or future culling events of sows. The majority of foot lesion traits had a low heritability and low repeatability.

Lameness scored post-mating or pre-farrowing was associated with subsequent litter size; sows that were considered lame (score 2 or more), particularly those that were lame post mating were more likely to have smaller litters (around 0.5 pigs/litter difference). Sows which were lame post-mating had an odds ratio of 5.60 times higher incidence of culling for feet and legs compared to their sound counterparts, but the impact was relatively low because of the low incidence of lameness. The heritability for lameness was also low.

Application to Industry

The results of this investigation do not support the use of routine foot lesion scoring post mating in the herd as a standard husbandry technique to identify sows with a greater risk of future lameness.

Although the incidence of lameness in this herd was relatively low, the litter size of those sows that were moderately lame post-mating, was reduced by about 0.5 pigs.

Furthermore these lame sows were much more likely to be culled from the herd.

Pork producers are the main target for this information and should implement strategies to reduce the incidence of lameness in their herds to improve culling rates, litter size and improve the overall welfare status of the herd. There doesn't appear to be any significant benefit for including these traits describing foot health lesions in this pig genetic program, but results might differ for other populations.