

## **1C-101 - Physical and Nutritional Interventions to Reduce Sow Lameness**

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### **Aims and Objectives:**

The aims of this project were to use physical and/or nutritional strategies in gilts and sows as a means of improving longevity and reduce culling. The specific technical objectives of this project included:

- Utilizing feet trimming interventions to reduce the incidence of lameness.
- Develop methods for the rapid assessment of sow lameness.
- Utilize trace elemental analysis of hair samples to assess the effectiveness of mineral supplementation programs.

### **Key Findings:**

Trimming of gilts feet after they are mated, whilst effective at changing the pattern of foot lesions, did not have a major influence on the reproductive performance of the gilt within this herd, which had a relatively low incidence of inherent lameness. In a herd with significant lameness issues, this procedure may have greater application. It would appear that foot lesions are already established in gilts prior to first mating and that greater selection pressure placed on foot lesions when being selected for breeding is possibly required to influence lesion development.

Thermal imaging does not appear to be a method to identify sows that are likely to go lame in the short term, with hotspots seen in many sows with normal gaits. However, it does appear that thermal imaging is useful in identifying the potential cause of lameness in sows with modified gaits, allowing for more targeted treatments to be undertaken and monitored. Longer term studies may be required to determine whether thermal imaging can detect sows well before they develop a compromised gait and become lame.

Changes in organic mineral supplementation were able to be detected through the analysis of hair samples. This analysis not only showed changes in the pattern of deposition of the trace minerals that were supplemented but also showed an impact on the important bone minerals - calcium, phosphorus and magnesium. Analysis of hair samples may be a useful adjunct in any studies that are designed to investigate the role of trace and macro minerals in bone/foot health and lameness.

### **Application to Industry:**

Remedial feet trimming did not have an impact on lameness and had only a minor impact on wean-to-oestrus intervals. The prophylactic feet trimming treatment of mated gilts doesn't appear to be warranted in herds with low levels of lameness. The established foot lesions present at the initial inspection of gilts in this project suggests that lesions begin development earlier in the gilts life, which indicates greater scrutiny for lesions at selection may be required.

Thermography would appear to be a useful tool for targeting treatment in those sows that exhibit lameness. The high incidence of hotspots seen in sows with a normal gait suggests that thermography should be investigated further to determine if this technology can be used to predict the likelihood of lameness later in life.

There also appears to be scope to use hair analysis to better understand the metabolism of dietary organic/inorganic minerals associated with bone health and lameness.