



Project Number & Title: 1A-118 FENCE-LINE BOAR EXPOSURE AT THE END OF LACTATION TO IMPROVE REPRODUCTIVE PERFORMANCE OF GROUP HOUSED SOWS AND THE IDENTIFICATION OF SOWS THAT SPONTANEOUSLY OVULATE DURING LACTATION

Project Leader Dr William van Wettere (The University of Adelaide)

Project Participants Dr Rebecca Morrison (Rivalea)

Aims and Objectives

The current study had two aims. One, to determine whether four days of fence line boar exposure in the last week of lactation reduces the weaning to mating interval in either farrowing crates or group lactation, and increases subsequent litter sizes, without inducing lactation oestrus. Two, to determine whether changes in vulval temperature accurately identify the timing of oestrus in weaned sows.

Key Findings

- Fenceline boar exposure during the last 4 days of lactation stimulated lactation oestrus in 22% of group housed sows and 8% of crated sows.
- Weaning to re-mating intervals were shorter for sows housed in groups and receiving fenceline boar exposure, compared with sows housed in crates.
- Compared to sows mated after weaning, mating during lactation resulted in lower farrowing rates (67.5% versus 87.8%) and smaller subsequent total litter sizes (12.8 versus 14.1).
- Vulval temperature was higher during oestrus
- 84% of sows which did not display oestrus prior to day 7 post-weaning had ovulated undetected prior to this time (based on plasma progesterone).
- Gestation lengths shorter than 115 days produced larger litters, but a higher incidence of pre-foster deaths, and resulted in smaller litter sizes post-foster.
- There was a significant, positive correlation between gestation lengths prior to, and after, the imposed treatment.

Application to Industry

The current data demonstrated reduced fertility and fecundity of sows mated during, as opposed to after, weaning. It is, therefore, suggested that protocols focussed on mating sows during lactation should involve a reduction in metabolic demand to the sow (i.e. split-weaning or interrupted suckling). Vulval temperature increased at oestrus; however, its value as a strategy to detect spontaneous lactation ovulation requires further work. It is also evident from the current data that sows with short pregnancies give birth to less viable piglets, which is consistent with previous evidence of extended parturition and increased still births in this population of sows. It is also recommended that heat detection start immediately at weaning for sows with longer lactations.

Based on these data, three areas of future research are proposed:

- Develop commercially applicable protocols for lactation oestrus management which incorporate a reduction in suckling load
- Approximately 10 - 15% of sows have pregnancies shorter than 115 days. Therefore the impact of short pregnancy lengths on piglet survival and growth from birth to slaughter should be investigated, and strategies to prevent short pregnancies (premature farrowings) should be investigated.
- The apparent repeatability of gestation length within individual sows requires further investigation, as it may provide a useful tool for either strategic culling of sows or targeted use of interventions which prevent premature farrowing.