



1A-106: *Development of a lactational oestrus induction protocol that can be implemented in confinement free sow housing systems*

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Aims and Objectives:

1. To examine oestrus induction protocols in lactating sows that involve different protocols of piglet separation and direct boar exposure
2. To investigate the significance that sow metabolic status could have on the success of oestrus induction in lactation
3. To investigate the behaviour and welfare of sows and piglets during periods of separation as part of an oestrus induction protocol.
4. To monitor follicle development in lactating sows to identify the levels of spontaneous ovulation during lactation.

Key Findings

- Daily piglet separation for 16 hrs for 3 consecutive days starting on day 21 of lactation was a successful oestrus induction protocol, although there were obvious adverse effects on piglet growth. For this protocol, 82% of sows were mated during lactation and 92% of these sows farrowed successfully with an acceptable litter size.
- Either a shorter separation period of 8 h/d, or temporarily removing sows from their farrowing crate and providing 30 min of full boar contact, were not sufficient by themselves to achieve adequate oestrus responses or adequate subsequent farrowing rates.
- There did not appear to be any effect of the metabolic status of sows during lactation on their ability to respond to oestrus induction protocols.
- An 8-hr daily piglet separation protocol for 7 consecutive days had little adverse effect on the welfare of sows and their piglets. Sow udder injury or cortisol levels were unaffected by the separation protocol. There were no consistent effects on piglet cortisol and there appeared to be no long term adverse effects on the welfare and behaviour of piglets during the daily 8-hr separation protocol.
- Examination of follicle size during lactation and weaning to oestrus interval data revealed that about 8-9% of the sows that were monitored, potentially ovulated during lactation. Oestrus induction protocols during lactation would identify these sows allowing them to be mated at this lactational oestrus.

Application to Industry

Daily piglet separation for 16 hrs for at least 3 consecutive days from day 18 to 21 of lactation can result in acceptable oestrus response rates and fertility. However shorter separation periods would be more acceptable to industry and the community because of possible adverse effects on piglet growth and welfare.

It is likely that a combination of less intrusive separation protocols, combined with boar exposure and even group housing in late lactation may be more acceptable for commercial pork production systems. These combined strategies could result in acceptable oestrus response rates and subsequent fertility, which would enable mating during lactation to be a real option.

Mating during lactation may allow more flexibility in grouping sows after insemination. Furthermore it may allow piglets to be weaned at a later age or in a more gradual process with benefits to their welfare and growth, without compromising overall sow reproduction rate.