1C-102 – *Effects of aggressive characteristics of individual sows and mixing strategies on the productivity and welfare of group-housed gestating sows*

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Benefit to Industry

Pork producers may need to increase average feeding levels, particularly around mixing and during early gestation, to ensure that less aggressive sows are able to consume adequate amounts of feed in group feeding systems so that reproductive performance is not compromised.

Key Findings/Conclusions:

- The behavioural response to a fibreglass model sow before mixing was moderately related to the aggressive behaviour of sows displayed in the early period after mixing in groups. This social behaviour test appears to be a useful predictive test of individual aggressive behaviour.
- Individual aggressive behaviour is repeatable within gestations but less so between successive gestations, suggesting that experience and group composition affect the aggressive behaviour of individual sows.
- Aggressive behaviour of individual sows early after mixing was related to the injuries, stress and litter size of the individual sow.
- Mixing females either of predicted high levels of aggression (homogenous groups) or mixing sows randomly (heterogenous groups) had little effect on the welfare and production outcomes at a group level.

Potential Users of Information:

- Highlights to industry the variation that exists in individual sow aggression and consequently the welfare and productivity implications for the individual.
- The social behaviour test was moderately related to aggressive behaviour of sows mixed in groups. The magnitude of the relationships improved with age suggesting that social experience may be important in the predictive value of this test. This social behaviour test may provide a useful measure for selection if animals are scored at least in adulthood after experience of grouping or scored several times to assess their true phenotype and full- or half-sib analyses are utilised.
- Dominant sows tended to gain more weight in gestation and have a larger litter size, perhaps because of increased feed intake through priority access to feed and/or less stress.

Background:

Sow aggression in group housing systems poses a significant risk to sow welfare and productivity. Aggression is likely to depend not only on their housing, including characteristics of their group-mates and access to resources, but also on genetics and previous experience. The ability to predict aggression may provide opportunities to genetically select against aggressiveness. Furthermore, the ability to predict aggression would be a useful research tool to understand the effects of group composition in terms of aggressive behaviour of individual sows on sow welfare and productivity.

Methodology:

Three experiments were conducted to examine:

1. the development of possible predictive tests of aggressive behaviour.
2. repeatability of aggressive behaviour of group-housed sows within and between parities.
3. effects of group composition in terms of the aggressive behaviour of individual sows on the welfare and reproductive performance of both the individual and the group as a whole.