



**Project Number & Title**

*1A-115 The feeding behaviour of sows and its relationship to sow welfare and reproduction.*

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**Aims and Objectives**

This project examined the feeding behaviour of sows, fed over multiple feed drops, and how this relates to sow welfare and reproduction. The objective was to study whether feeding sows multiple times per day reduced competition for feed in the later drops, thereby increasing feeding opportunities and improving the productivity and welfare of submissive sows.

**Key Findings**

Dominant sows (sows that deliver more aggression than they receive) spent the most time feeding in the location of the pen where the majority of feed was distributed. Subdominant (sows that receive more aggression than they deliver) sows spent more time feeding opportunistically, whereas submissive (sows that deliver very little or no aggression) sows spent the most time avoiding aggression and consequently the feeding area. These relationships were true regardless of day post-mixing, gestation, or feed drop number within a day. Floor feeding sows multiple times per day did not increase the time submissive sows spent feeding in the later drops. Sows that fed directly under the feed hopper spent less time showing feeding behaviour on the slatted area at the back of the pen, delivered more aggression, gained more weight and ended up heavier. Sows that frequently fed on the cement floor where there was reduced feed availability had lower cortisol concentrations, but received more aggression. One interpretation of these results is that sows that fed opportunistically were more willing than avoidance feeders to risk receiving aggression from dominant conspecifics in order to gain access to feed. When submissive sows have to compete for access to feed, the motivation to minimise harm and avoid aggression is in direct conflict with the motivation to approach the feeding area. However, these animals sustained an adequate level of intake to maintain pregnancy and some growth. An examination of the relationship between the prevalence of oral stereotypies that reflect frustrated motivation to feed and feeding behaviour may assess variation in sow hunger within groups. However, ethical considerations relating to the price, in terms of fear, stress and injury, competitive feeding systems require submissive sows to pay in order to get access to food are required when feeding systems for group-housed are considered and implemented.

**Application to Industry**

In addition to food restriction imposed on gestating sows, floor-feeding systems place considerable spatio-temporal restrictions on the availability of feed. Consequently, the space that is available to pigs to feed, and regulate social interactions are feeding, is limited. This system forces low ranking sows to risk receiving aggression by feeding in close proximity to high-ranking sows, or alternatively avoiding feeding. While it is difficult to reduce temporal restrictions on food availability to floor-fed gestating sows, spatial restrictions may be minimised by increasing the spread of feed onto the ground (e.g., by increasing the number of feed hoppers per pen) thereby increasing accessibility for low ranking sows. Although aggression declines over subsequent feed drops, dominant sows nonetheless monopolise the feeding area in each feed drop. Research into methods of promoting and/or prolonging satiety in restively fed group-housed sows is required. A multifactorial approach to reducing hunger in sows, that utilises dietary manipulations, methods to extending meal length and the provision of substrates that allow for the expression of appetitive behaviours, may be most effective.