

## Influence of mixing on the initiation of piglet feeding and post weaning growth performance

F H Reynolds, J M Forbes, H M Miller

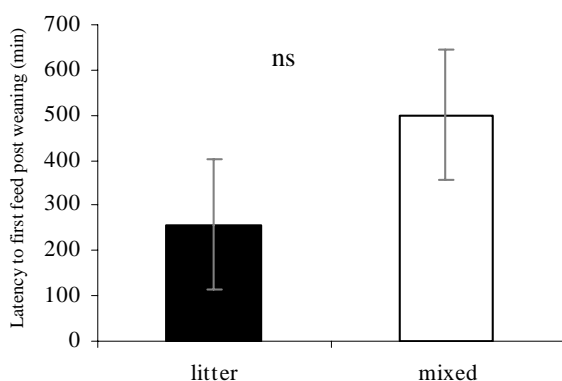
University of Leeds, Leeds, United Kingdom

Email: [f.h.reynolds@leeds.ac.uk](mailto:f.h.reynolds@leeds.ac.uk)

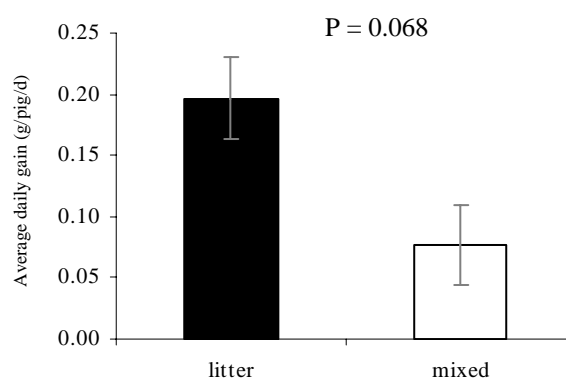
**Introduction** Weaning is a stressful period for the piglet, invariably typified by low voluntary feed intake and reduced performance. Moreover, if siblings are separated and mixed with other litters, stress increases and the learned stimulus of the group to feed is disturbed (Brooks *et al.*, 2003). This experiment was part of a larger investigation into the voluntary feed intake of the piglet in the immediate post weaning period. We investigated the difference between mixed litter origin or sibling groups on latency to initiate feeding and performance to day six post weaning. We hypothesised that mixing litters would increase latency to first feeding and reduce growth rate in the first few days after weaning.

**Materials and methods** Seventy-six piglets (Large White x Landrace) were weaned at  $8.0\text{kg} \pm 0.28$  (s.e.m.) and  $28.1 \pm 0.39$  days of age into eighteen mixed sex groups with four-five pigs per pen. Piglets were housed in fully slatted weaner pens ( $1.7\text{ m}^2$ ). Piglets were allocated to either mixed (each individual from a different litter) or litter pens (siblings), balanced for weight and gender. Feeding behaviour was monitored 24 hours a day using a multi-spaced feed intake recording system (Leeds University Pig Intake System (LUPINS)) in each pen. Piglets were identified by LUPINS using an individual transponder ear tag. Each pen of piglets was offered *ad-libitum* access to one feed ( $16.45\text{ MJDE/kg}$ ,  $1.6\text{g lysine/kg}$ ). Piglets were weighed at weaning and six days post weaning. The time in minutes between entering the pen and being actively present at the trough for a feeding bout of  $>0.5$  minutes was defined as the latency to first meal which was log transformed prior to analysis. Data were analysed using GLM procedures of Minitab 12.2 with replicate in the model and weaning weight as a covariate.

**Results** There was no significant difference between the latency to first meal between mixed or litter treatments (Figure 1), with a mean latency of  $379\text{ min} \pm 73.7$  (s.e.m.). However, piglets in litter pens tended to have higher average daily weight gains than piglets in mixed pens ( $P = 0.068$ ) where Litter =  $197\text{ g/d} \pm 33.0$  (s.e.m.) and Mixed =  $77\text{ g/d} \pm 33.0$  (s.e.m.) (Figure 2).



**Figure 1** Effect of weaning group composition on latency to first meal after weaning.



**Figure 2** Effect of weaning group composition on average daily gain to day 6 post weaning.

**Conclusion** This study found no negative consequences of mixing unacquainted piglets on the initiation of feeding post-weaning, in contrast to our initial hypothesis. However our results do suggest a post weaning growth benefit when piglets remained with their littermates indicating that mixing piglets at weaning is disruptive which is in line with our hypothesis. Indeed, Tan *et al.* (1991) stated that mixing piglets at weaning increases stress and aggression which would decrease FCR efficiency and reduce weight gain post weaning. Mixing litters post weaning is common practice in the pig industry in order to 'size' pigs for easier management. However, consideration should be given to alternative mixing strategies at weaning in order to improve piglet welfare and performance during this critical period.

### References

Brooks, P. H. and Tsourgiannis, C. A., 2003. Factors affecting the voluntary feed intake of the weaned pig. In *Weaning the pig: Concepts and Consequences* (ed. J. R. Pluske, J. Le Dividich and M. W. A. Verstegen), Wageningen Academic Publishers, pp 81 – 111.

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