

# The effects of maternal hygiene and nutrition during late gestation on piglet birth weight and viability

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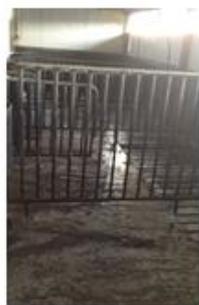
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This year, my supervisors Paul Hughes, Roy Kirkwood and myself, with the help of the Ronald Lienert Memorial Scholarship, the Pork CRC and the University of Adelaide, examined the effect of feeding level in late gestation on performance of sows housed in hygienic or standard conditions. We expected increased nutrient requirements in sows housed in standard hygiene settings due to the nutrient requirements of a more active immune system.

The high hygiene pens were cleaned, prior to sows being moved, by pressure cleaning and disinfection, followed by covering the floors with hydrated lime. For the four week experiment, the high hygiene housing was pressure cleaned every Monday, Wednesday and Friday. Standard hygiene housing remained un-cleaned. Daily feed allowances were either 2.3 kg (29.9 MJ DE) or 3.3 kg (42.9 MJ DE) of a standard gestation diet, mirroring flat and phase feeding in gestation, respectively.



Pictures 1,2,3:  
High hygiene housing  
(following, pressure  
cleaning (1),  
disinfection (2),  
and spreading of lime (3)

Picture 4:  
Standard hygiene  
housing



At the beginning of the experiment and before the sows were moved into the farrowing sheds, we took blood as well as weighing and measuring P2 back fat thickness. Blood was used to calculate the neutrophil to lymphocyte ratio, which is an indication of immune system activation status. Farrowing duration, piglet birth weights, numbers of live, stillborn and mummified piglets were noted as was placental weight and the proportion of the litter to survive to 72 hours after farrowing.

The pattern of feeding during late gestation had no effect on sow condition or reproductive outcomes. Similarly, the data from the hygiene treatments showed no effect on these outcomes, as well as no sign of increased immune activation. The results of this study support a constant feed level and standard hygiene practices in late gestation as it is unlikely that there will be an economic benefit from increased feed or improved hygiene in late gestation.