

Pigs immediately post weaning are fed diets high in crude protein (CP) content (around 230 g/kg), in order to meet their high protein requirements. It has been suggested, however, that a diet high in CP may also predispose pigs to the enteric disorders immediately post weaning. This would be significant in systems where in-feed antimicrobial growth promoters (AGP) are prohibited, as the incidence of digestive disorders, poor growth and development may increase.

The **NUTWEAN** project funded by Defra and the British Pig Industry investigated nutritional alternatives to minimise the risk from enteric disorders in the weaned pig, in the absence of in-feed AGP. One of the alternatives investigated was the level of dietary protein supply and weaning age on the health and performance of pigs.

Trial details

Two trials were conducted to investigate the consequences of dietary protein content (130, 180 and 230 g CP/kg) and weaning age (4 or 6 weeks of age) on the performance and health of pigs. Pigs were also exposed to *Escherichia coli* to different degrees (low and high exposure). This microbe is associated with the common diarrhoeal disease of newly weaned pigs, post-weaning colibacillosis. The diets were fed to the pigs for 2 weeks after weaning; the performance of the pigs was followed up to 10 weeks of age.

Trial results

- A moderate reduction in dietary CP content from 230 to 180 g CP/kg had no adverse effects on the performance of pigs. However, a further reduction to 130 g CP/kg reduced daily gain.
- The high level of exposure to *E. coli* reduced pig performance as expected. However, this effect was larger in pigs on the 230g CP/kg diet and in pigs weaned at 4 weeks of age.
- Excretion of *E. coli* in the faeces, which is indicative of the persistence of the infection in the digestive tract, persisted longer in the 4 week weaned pigs and the pigs on the 230 g CP/kg diet.
- Pigs on the high CP diet had looser faeces and higher incidence of diarrhoea, but dietary CP content had no effect on gut morphology and development.
- The performance of all pigs had converged by 10 weeks of age, irrespective of their previous treatment.

Conclusions

Moderate reductions in the dietary CP content will not be associated with reductions in performance of weaned pigs and may be associated with an improvement of their health. This would be especially the case for pigs that are weaned at an earlier age and are exposed to 'dirtier' environments, where the risk to the weaned pig from enteric disorders would be higher and the consequent effects on their performance more significant.