

Effect on growth performance of growing pigs fed a dry diet, a naturally fermented diet or an inoculated fermented diet

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Alternatives to in-feed antibiotics have become increasingly important due to concerns about the rising incidence of antibiotic-resistant bacteria. Fermented liquid diets may be one way to solve this problem as fermented feed is characterised by high numbers of lactic acid bacteria and yeast, a low pH and a high concentration of lactic acid (Brooks *et al.* 1996). Feeding liquid diets to slaughter pigs, compared to dry diets, has shown to improve the efficiency of feed utilisation albeit the effect on growth rate is less consistent compared to dry feed (reviewed by Jensen and Mikkelsen 1998). This study investigated the growth performance of growing pigs fed either a fermented liquid feed or a dry diet under a commercial setting.

Growing pigs (49.41 kg \pm 3kg) were housed in pens in groups of 160 pigs with entire males separated from gilts. Pigs were fed a dry mashed diet (n = 4), a naturally fermented diet (n = 6) or a fermented diet inoculated with *Lactobacillus plantarum* (n = 6). *L. plantarum* is a facultative heterofermentative lactic acid bacterium. Both fermented liquid diets used sorghum as the primary cereal for fermentation and had an average digestible energy value of 13.4 MJ/kg, whereas the dry mashed diet was a generic diet and had a comparable digestible energy value of 13.6 MJ/kg. The trial ran for 30 days and the pigs were fed *ad libitum*.

Though not significant, there was a small numerical increase in the average daily gain (ADG) and the average daily intake (ADI) with feeding a fermented liquid diet compared to the dry mashed diet (Table 1). Feeding a naturally fermented diet tended to improve feed conversion (FCR) as compared with the inoculated fermented diet, but was not significantly different from the dry diet. Mortality remained low throughout all diet treatments.

The results from this trial indicate that the growth performance of growing pigs fed a fermented diet and a dry diet is similar. However, during the course of the trial it was noted that pigs fed the fermented liquid diet had a larger amount of wastage of feed from troughs compared to those given the dry mashed diet. Therefore, the FCR for fermented treatments may be lower than actually recorded.

Brooks, P.H., Geary, T.M., Morgan, D.T. and Campbell, A. (1996). New developments in liquid feeding. *The Pig Journal* 36, 43–64.

Jensen, B.B. and Mikkelsen, L.L. (1998). Feeding Liquid Diets to Pigs. In: *Recent Advances in Animal Nutrition*, pp. 107–126 (eds. P.C. Garnsworthy, J. Wiseman). Nottingham University Press, Nottingham,

Table 1 Influence of diet treatments on the growth performance of growing pigs.

Diet treatment	ADG (kg/d)	ADI (kg DM/d)	FCR (DM basis)	% Mortality
Dry mashed	0.80	2.05	2.58	0.94
Naturally fermented	0.82	2.11	2.57	0.74
Inoculated fermented	0.84	2.18	2.63	0.84
<i>P</i> value*	0.74	0.20	0.93	0.79

*Significance level ($P < 0.05$)