

Economic Benefits of Feeding High Cost Weaner Diets are Maximised When Offered to Pigs Less Than 6.5 kg at Weaning

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Growth performance is typically reduced in the period immediately post weaning while the piglet adapts to the new environment and feed source. This reduction in growth performance can negatively affect lifetime performance (Tokach *et al.*, 1992). The use of high cost weaner diets during the first three weeks post-weaning is extensively practised to reduce the growth check and enhance performance to slaughter. It is hypothesized that the weight of the piglet at weaning will influence the growth performance and economic benefits from such a feeding program. Therefore, the aim of this study was to evaluate the benefits of feeding high cost weaner diets during the period immediately post weaning for pigs of different weaning weights.

Seven hundred and twenty weaners (360 males and 360 females, Large White x Landrace, PrimeGro™ Genetics, Corowa, NSW) were selected at weaning (27 d of age) and allocated to pens of 10 pigs of the same sex. Pens were allocated to a 3x2 factorial experiment with the respective factors being weaning weight (light: pigs < 6.5 kg; medium: 6.5 to 8.0 kg; heavy: > 8.5 kg) and weaner feeding program (high or low cost). Diets fed to both the high and low cost treatment groups over the initial two weeks post weaning contained 15.1 MJ digestible energy (DE)/kg and 0.90 g available lysine/MJ DE. The high cost diets utilised cooked cereals, skim milk powder, Soycomil® (ADM Australia, Bondi Junction, NSW) and 280g/kg whey powder. The low cost diets contained wheat, lupin kernels, canola meal and 80g/kg whey powder. All diets also contained meatmeal, fishmeal, bloodmeal and soybean meal. Common diets were fed to both treatment groups from week three post weaning to slaughter. Pigs were commercially slaughtered at 123 d of age and carcass characteristics recorded on 240 pigs. Differences due to the effects of weaning weight and feeding program were analyzed using residual maximum likelihood mixed model analyses, and included the fixed effects of weaning weight and feeding program and the random effect of replicate. The experimental unit was the pen. All analyses were performed using Genstat 10th Edition.

Table 1. Influence of weaning weight and feeding program on weight at slaughter and economic returns.

Weaning weight...	Light		Medium		Heavy		SED	P value	
	High	Low	High	Low	High	Low		FP	W
Feeding program...									
Weaning weight (kg)	5.51	5.47	7.27	7.25	9.54	9.59	0.115	0.61	<0.001
Weight 123 d (kg)	91.2	88.0	98.5	95.6	101.1	101.4	1.10	0.06	<0.001
Carcass weight (kg) ¹	66.0	64.5	71.8	71.1	75.8	77.4	1.71	0.40	<0.001
Total feed costs (\$/pig) ²	76.5	75.0	83.6	78.8	86.4	85.0			
Feed cost/kg gain (\$/kg) ²	0.89	0.91	0.92	0.89	0.94	0.93			
Return on carcass weight (\$) ¹	211.2	206.4	229.7	227.5	242.5	247.7			

¹Carcass data on a subset of animals. Return on carcass weight calculated at \$3.20/kg; ²Wean to finish; FP, feeding program; W, weight.

Growth performance during the initial 6 d post weaning was influenced by diet complexity, with the pigs offered the high cost diets gaining faster (74.0 and 52.3 g/d respectively; $P=0.031$) during this time. There were no other main effects of diet complexity on growth performance through to slaughter. Weaning weight had a profound influence on carcass weight, with the pigs classified as 'heavy' at weaning increasing their weight advantage at slaughter (Table 1). The results of this investigation clearly indicate that weaning weight does influence the response to high cost weaner diets. Feeding the high cost diets to heavy weaners was not economical, suggesting that this program should be focused on the light weight weaners to maximise returns.

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