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Pork CRC Research Summary

Project Number & Title:

2B-103 Strategies to enhance the performance of pigs immediately after weaning: Influence of weaner diet complexity and weaning weight on lifetime performance

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Background:

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 reduce lifetime growth performance. The use of high cost weaner diets during the first three weeks post weaning is extensively practised throughout the USA and Europe to reduce the growth check post weaning 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 weight classes.

Methodology:

Seven hundred and twenty weaners (360 males and 360 females) were selected at weaning (27 days of age) and allocated to pens of 10 pigs of the same sex based on individual weaning weight (light weaning weight: pigs below 6.5 kg; medium weaning weight: 6.5 to 8 kg; heavy weaning weight: above 8.5 kg). Within weaning weight category and sex, pens were randomly allocated to either the high or low cost weaner feeding program. Diets fed to both the high and low cost treatment groups over the initial two weeks post weaning were formulated to contain 15.1 MJ digestible energy/kg and an available lysine: DE ratio of 0.90. The high cost diets utilised ingredients such as cooked cereals, skim milk powder, soycomil and greater concentrations of whey powder compared to the low cost diets. Common diets were fed to both treatment groups from week three post weaning to slaughter. Growth performance was measured periodically from weaning (day 0) to day 123. Carcass characteristics were recorded on a subset of animals.

Key Findings/Conclusions:

- Growth performance during the initial 6 days post weaning was influenced by diet complexity, with the pigs offered the high costs 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 over the medium and light weaning weight pigs (76.56, 71.50 and 65.50 kg respectively, $P<0.001$).
- The differences in cost per kg gain from weaning to the end of the finisher period are displayed in Table 1, with the feed costs based on feed intakes and diet costs during the experiment.





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Table 1. Influence of weaner feeding program and weaning weight on the cost per kg live weight gain from weaning to the end of the finisher period

Weaning weight	Light		Medium		Heavy	
	High	Low	High	Low	High	Low
Weaner feeding program						
Total feed costs wean-finisher (\$/pig)	76.51	75.04	83.60	78.76	86.40	84.98
Live weight gain wean - finisher (kg)	85.69	82.53	91.23	88.35	91.56	91.81
Cost/kg gain wean - finisher (\$/kg)	0.89	0.91	0.92	0.89	0.94	0.93
Return on carcass weight (\$/kg)*	166.3	160.5	179.7	174.4	184.4	185.0
Net Return (\$)	89.8	85.5	96.1	95.6	98.0	100.0

*Carcass weight calculated from final liveweight and a dressing percentage of 76%. Return on carcass weight does not take into consideration any price penalties for excess P2.

The results of this investigation confirm the impact of weaning weight on lifetime performance. The economic analyses suggest that the high cost feeding program should be focused on the light weight weaners in order to maximise returns.

Potential Users of Information (including value assessment):

Nutritionists, consultants and producers

