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Pork CRC Research Summary

Subprogram 2B: Innovative products and strategies for the manipulation of feed intake

Project Number & Title:

2B-101 (b) The effect of dietary fat concentration on the growth rate and feed efficiency of finisher pigs

Principle Investigator:

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Background:

The hypothesis of this experiment was that the addition of fat to finisher diets may improve the utilization of other nutrients and enhance the efficiency with which energy is used for growth

Methodology:

A total of 1,296 pigs with an initial weight of 64 kg were used in a 2 X 6 factorial experiment to investigate the effects of sex (male and female) and six levels (1%, 2%, 3%, 4%, 5% and 6%) supplemental dietary fat at the same dietary energy content (13.8 MJ DE/kg) on pig performance and carcass characteristics under commercial situations. Pigs were housed in groups of 9 and the diets were offered *ad libitum* for 35 days. The actual DE levels of the diets ranged from 13.6 to 14.1 MJ/kg with increasing dietary supplemental fat from 1 to 6%

Key Findings/Conclusions:

Increasing the level of fat (tallow) in the diet improved feed conversion efficiency throughout the 35 day experiment increased carcass weight and P2 fat thickness even when carcass weight was used as a covariate in the analysis of the data. For males increasing the level of fat added to the diet from 1% to 6% reduced feed: gain from 2.55 to only 2.31 and increased carcass weight from 74.9 to 77.3 kg and profit/pig by \$4.10.

For females the responses were more moderate and the effects on profit were variable ranging from - \$1.18 to + \$1.47/pig.

The results suggest that adding fat to finisher diets enhances the efficiency of growth and for males in particular can markedly improve the efficiency with which feed (energy) is used for carcass growth resulting in improved profitability. For females the effects of increasing dietary fat on P2 fat thickness tends to reduce the potential for enhanced profitability though this will depend on the genetics involved and the price and grading system in which the pigs are sold.

Table 1 shows the possible advantage in cost of production that can be achieved from increasing NDF level in the pig diet

Table 1: Cost analysis of increasing dietary fat for finisher pigs over a 35 day period (averaged for males and females)

Fat Level %	1	2	3	4	5	6
Diet DE (MJ/kg)	13.6	13.7	13.8	13.9	14.05	14.2
Feed: gain	2.6	2.58	2.52	2.51	2.47	2.43
Carcass weight (kg)	74.2	74.9	75.4	75.4	75.4	75.8
P2 (mm)	8.8	8.9	9.1	9.4	9.2	9.2
Net improvement in margin (\$/pig)	-----	1.93	1.38	1.24	4.50	4.91

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