Established and supported under the Australian Government's Cooperative Research Centres Program

Pork CRC Research Summary
Subprogram 2B: Innovative products and strategies for the manipulation of feed intake

Project Number & Title:
2B101 – Effect of dietary neutral detergent fibre (NDF) content on growth rate and efficiency of finisher pigs

Principle Investigator:
Andrew Philpotts, QAF Meat Industries

Background:
The hypothesis of this experiment was that NDF, from the wheat by-product millmix, and supplemental fat have nutritional properties other than their chemical composition and digestible energy that enhance growth performance and efficiency in growing pigs

Methodology:
A total of 1,188 pigs with an initial weight of 65 kg were used in a 2 X 6 factorial experiment to investigate the effects of sex (male and female) and six levels (13,15,17,19,21 and 23%) of dietary NDF on performance and carcase characteristics over a 35 day period. The pigs were housed in groups of nine and all diets were formulated to contain 13.5 MJ DE /kg. Mill mix was the major source of NDF and tallow was used to maintain the energy level of the diets constant

Key Findings/Conclusions:
Increasing the level of NDF in the diet improved feed conversion efficiency throughout the 35 day experiment, had no effect on carcase weight but significantly reduced P2 fat thickness. The positive effects of increasing NDF on feed efficiency were most evident in the first 14 days of the study when the feed : gain of females and males improved from 2.58 to 2.35 and from 2.50 to 2.32 with increasing NDF from 13% to 19% respectively. Growth rate during the same period also improved significantly with increasing NDF in the diet, which followed through as a numerical increase in liveweight at the end of the experiment

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 NDF for finisher pigs over a 35 day period

NDF level %	13	15	17	19	21	23
Total feed consumed (kg)	89.7	88.8	89.6	88.6	88.5	88.7
Cost of feed ($/pig)	18.85	18.42	18.37	17.94	17.71	17.52
Liveweight gain (kg)	32.71	32.67	33.74	32.90	33.33	33.75
Cost/kg ($/kg)	0.676	0.564	0.545	0.545	0.531	0.519
Savings (cents/kg)		-1.24	-3.17	-3.10	-4.50	-5.72

Potential Users of Information: Nutritionists, Producers