



Maximising the benefits of high fat and high fibre diets during the finisher period

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Finisher phase:

High feed intakes → High feed costs

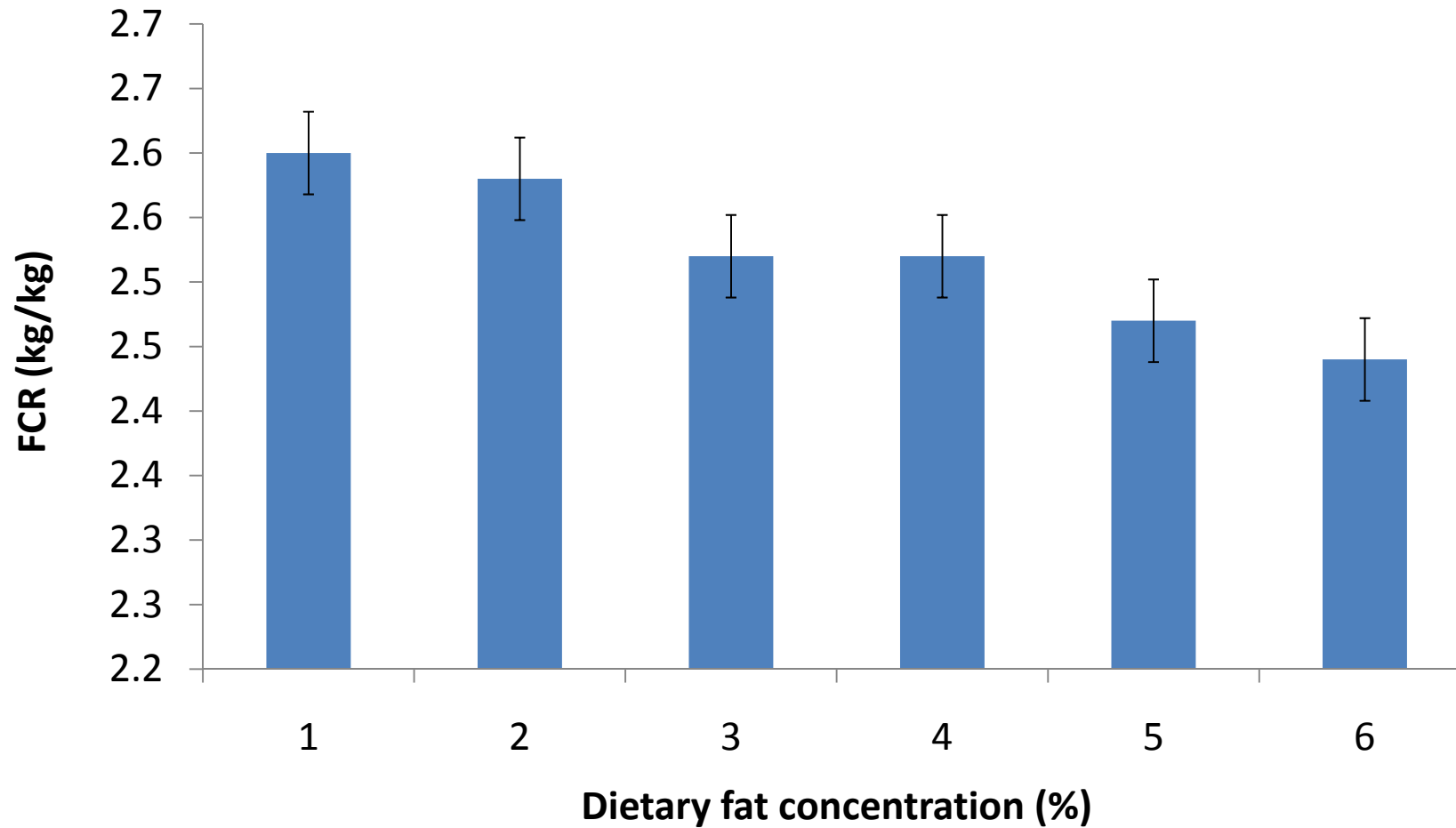
Feed efficiency very important

High fat finisher diets


- Increases the energy content of the diet
- If feed intake is not reduced, increases total energy intake
- Modern, lean genotypes can utilise the extra energy to increase protein deposition

FCR Finisher Period


P<0.001



High fat finisher diets

- Increases the energy content of the diet
 - If feed intake is not reduced, increases total energy intake
 - Modern, lean genotypes can utilise the extra energy to increase protein deposition
 - **Maximum response observed during initial 14 day feeding period** (Collins *et al.* 2009)
 - **Response may be greater than that expected from the increase in energy content alone**
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High NDF finisher diets

- **NDF – Neutral detergent fibre**
 - **Mill mix is high in NDF and readily available in Australia**
 - **Linear improvements in feed efficiency and carcass P2 when NDF increases from 13% to 23%**
 - **Maximum benefits obtained during the initial 14 days**
- 



How do we use both strategies?



Methodology

- **1296 pigs (Large White x Landrace, PrimeGro Genetics™)**
average weight $61.8 \text{ kg} \pm 0.42 \text{ kg}$
- **Group housed in pens of 9 pigs of the same sex (entire males and females)**
- **Pens randomly allocated within sex to finisher feeding strategy**

Methodology

A: Control finisher diet fed for 6 weeks

B: High fat diet fed for 6 weeks

C: High NDF diet fed for 6 weeks

D: High fat diet 3 weeks, high NDF diet 3 weeks

E: High NDF diet 3 weeks, high fat diet 3 weeks

F: Control diet 3 weeks, high fat and high NDF diet for 3 weeks

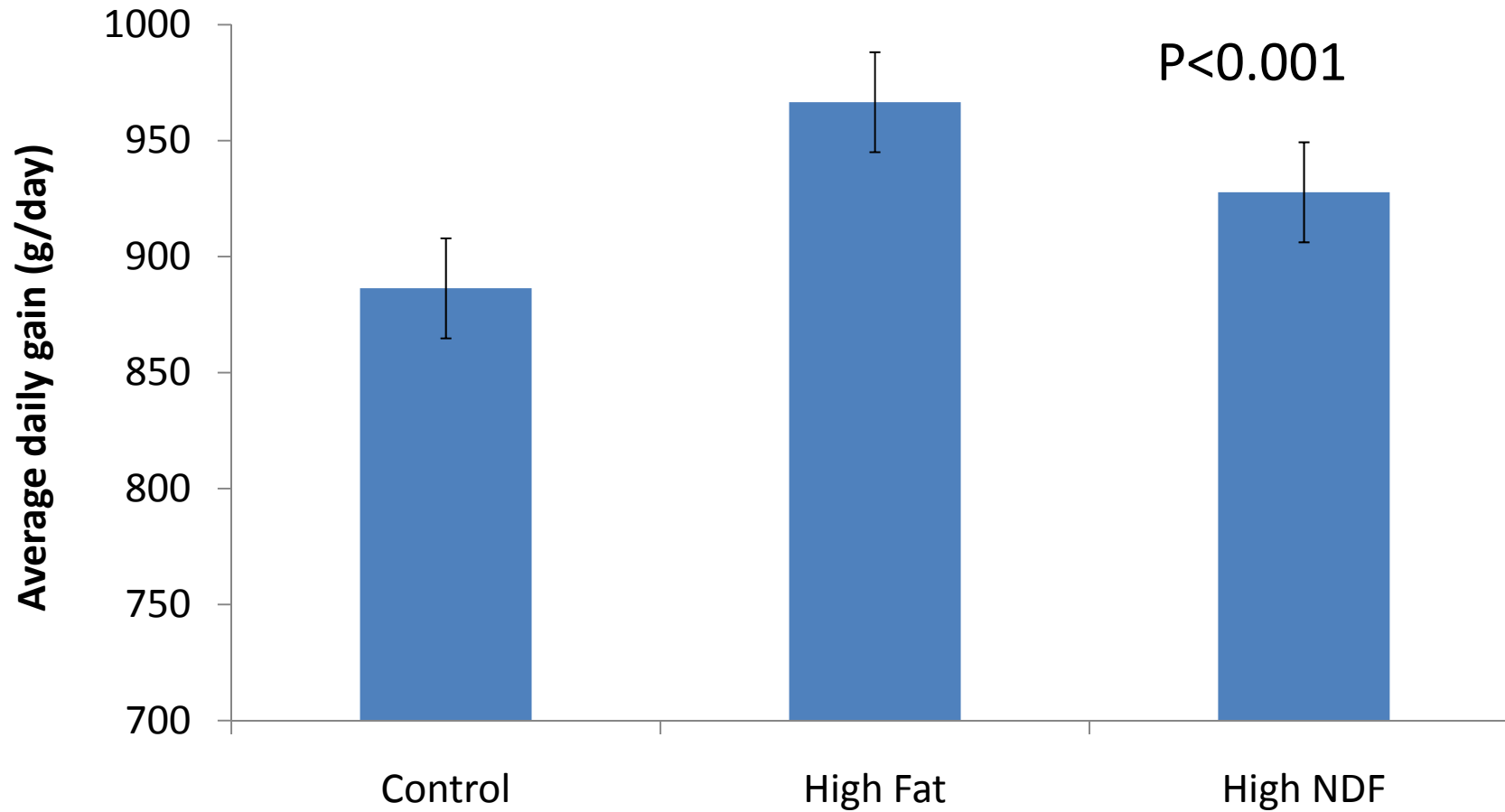
(constant DE)

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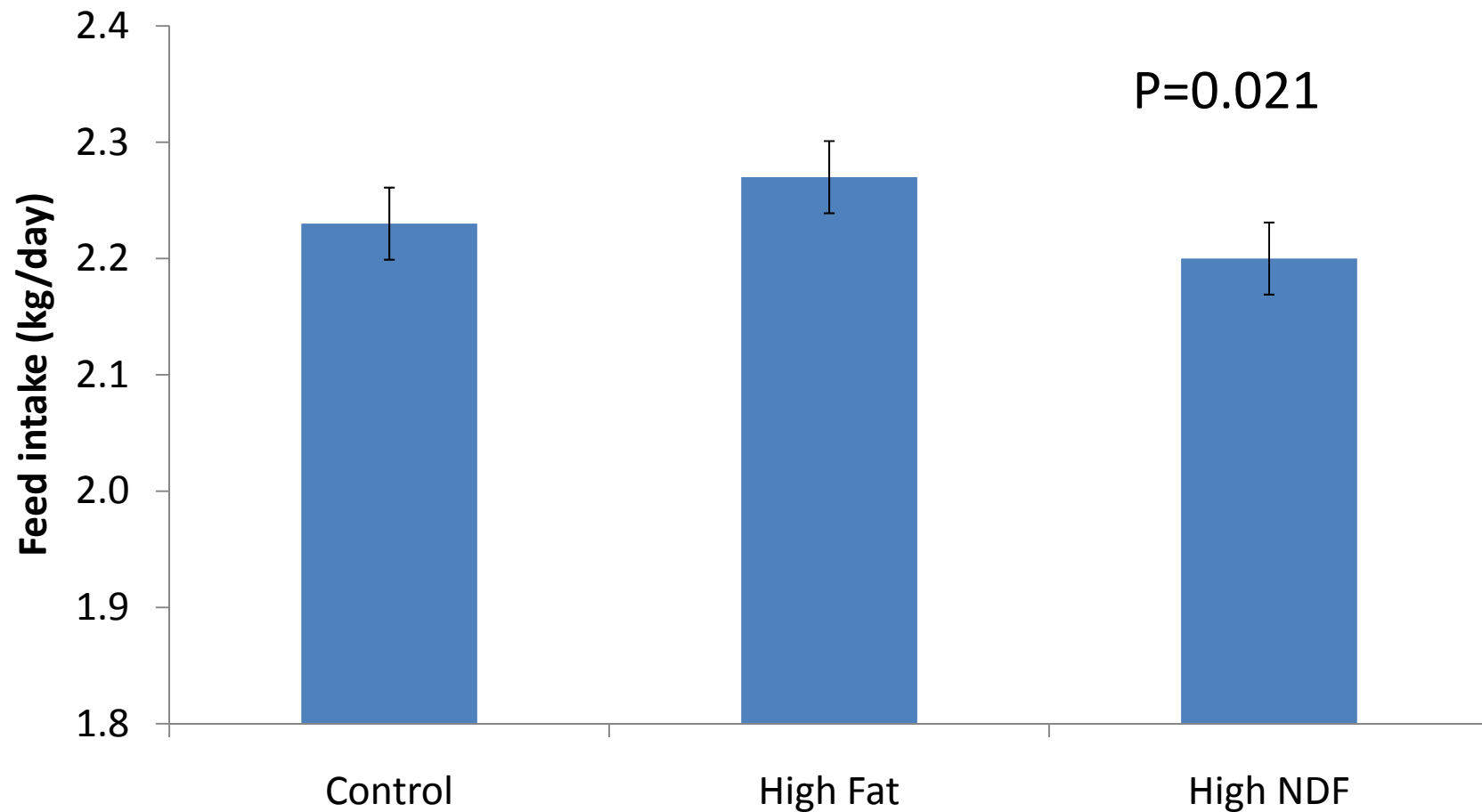
Methodology

- High fat diets – 5 % added fat (tallow)
- High NDF diets – 19 % NDF sourced primarily from mill mix
- All diets contained 0.53 g available lysine/MJ DE
- Digestible energy content of the diets 13.8-14.0 MJ
- Pigs fed from 16 – 22 weeks of age
- Pen weight recorded day 0, 21, 42
- Pen feed intake and carcass characteristics measured

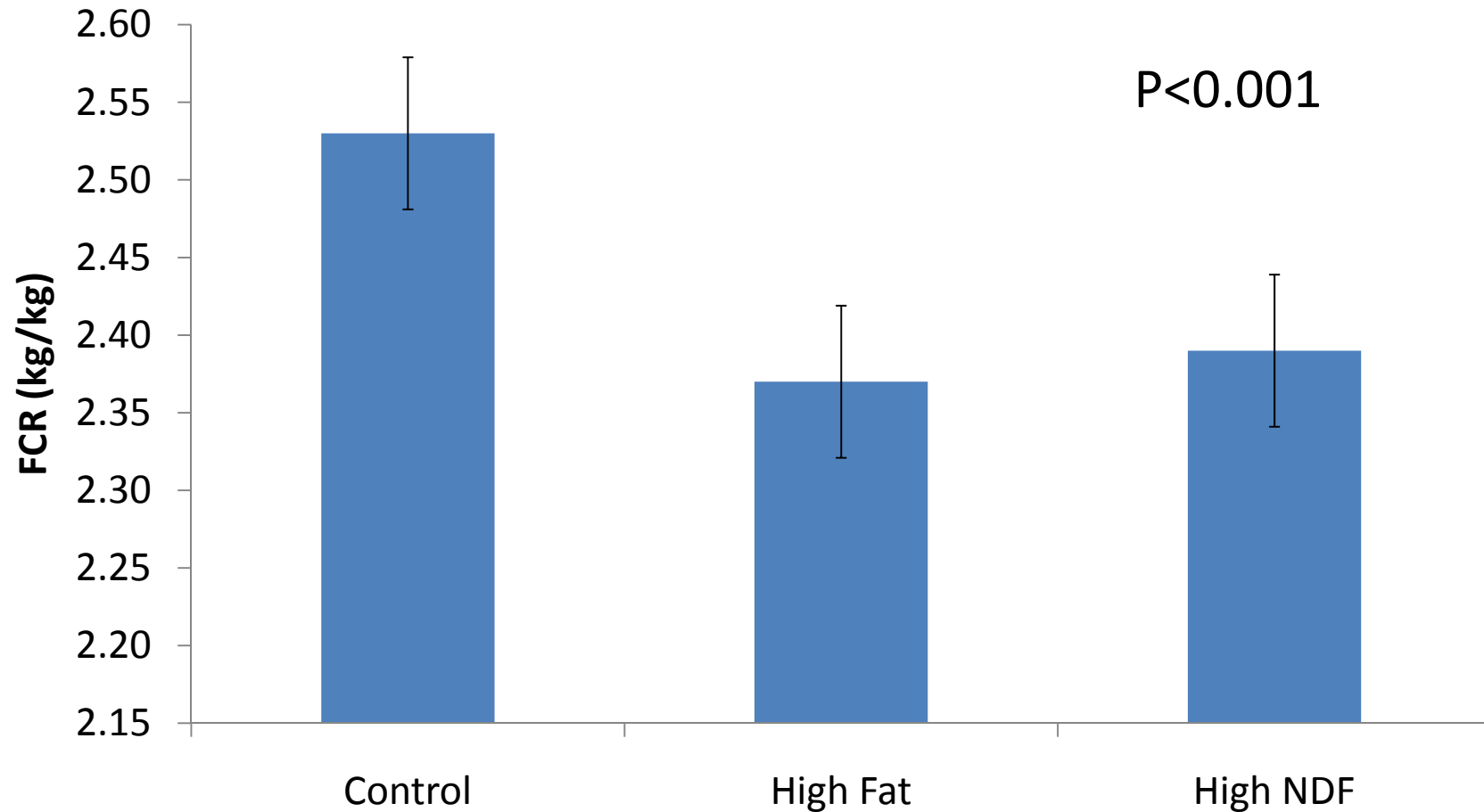
Daily gain 0 to 21 days



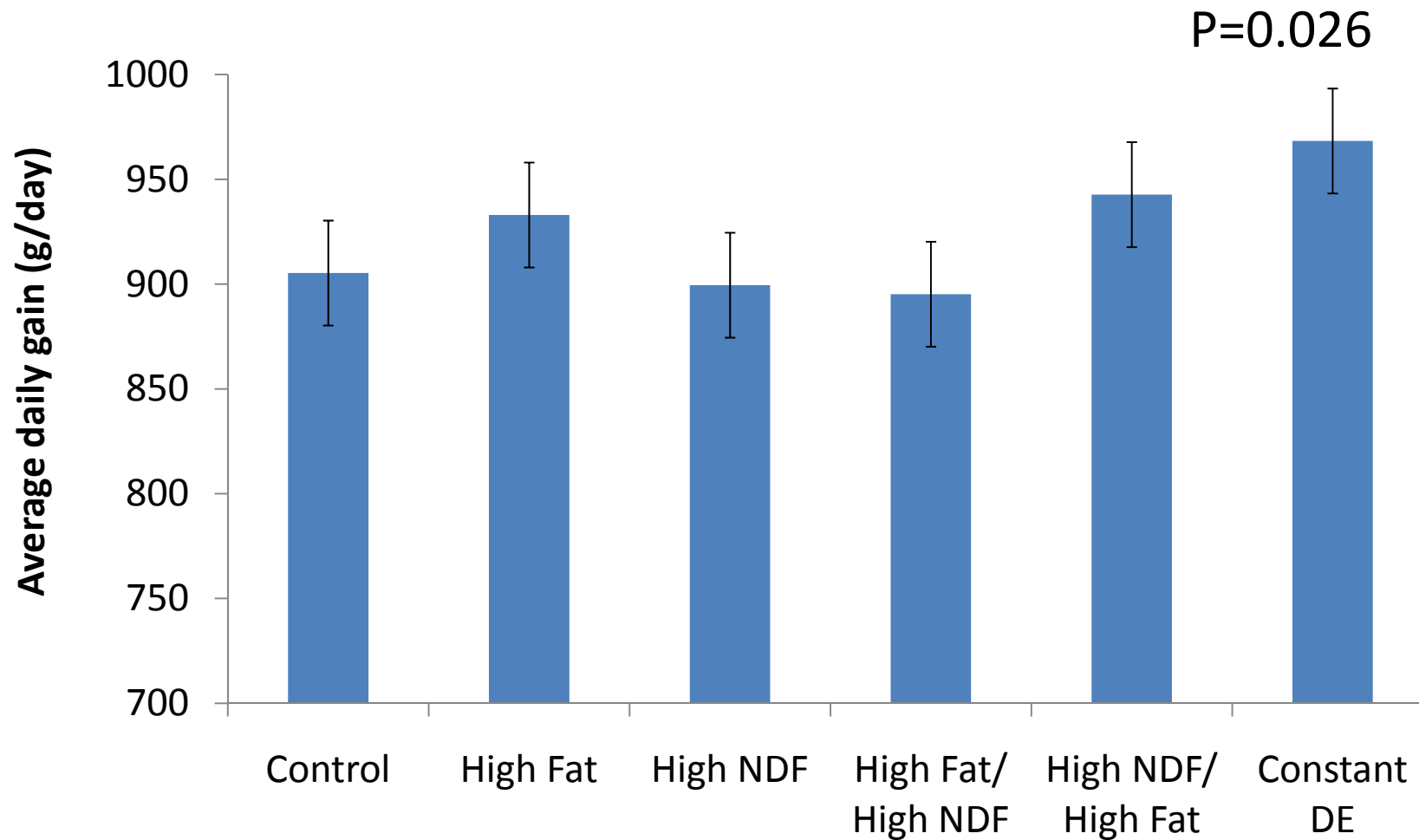
Feed intake 0 to 21 days



FCR 0 to 21 days

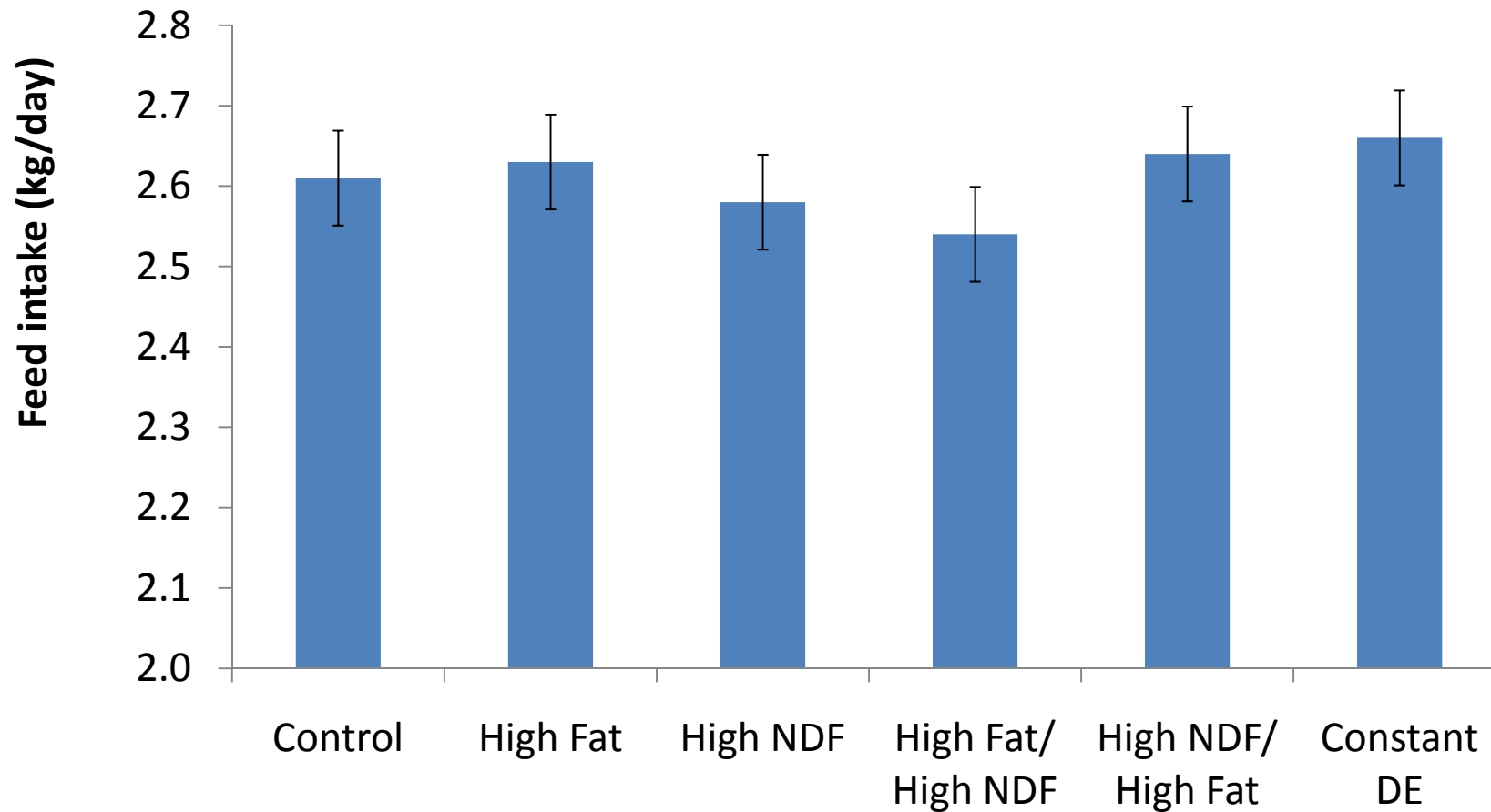


Daily gain 21 to 42 days

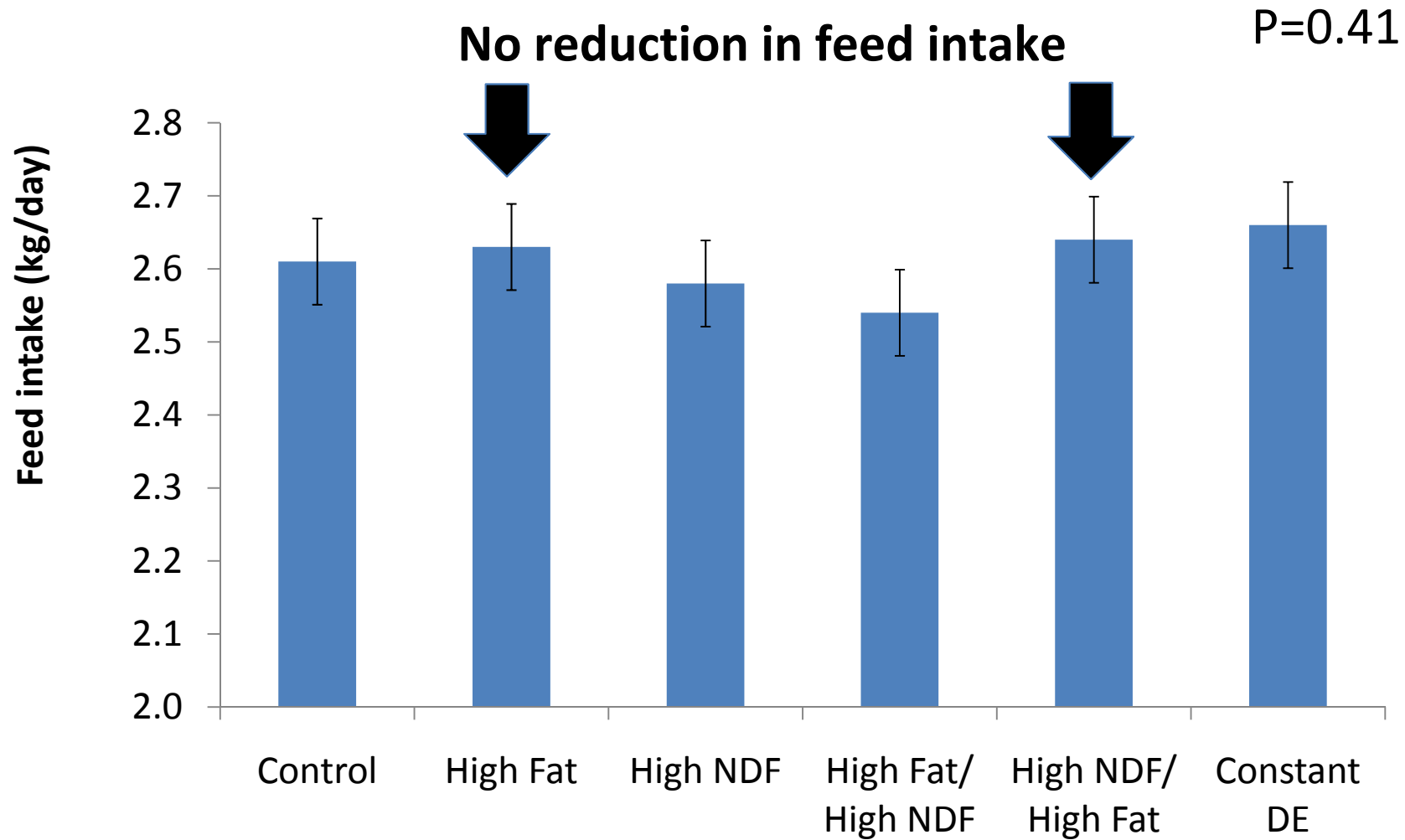


Feed intake 21 to 42 days

P=0.41

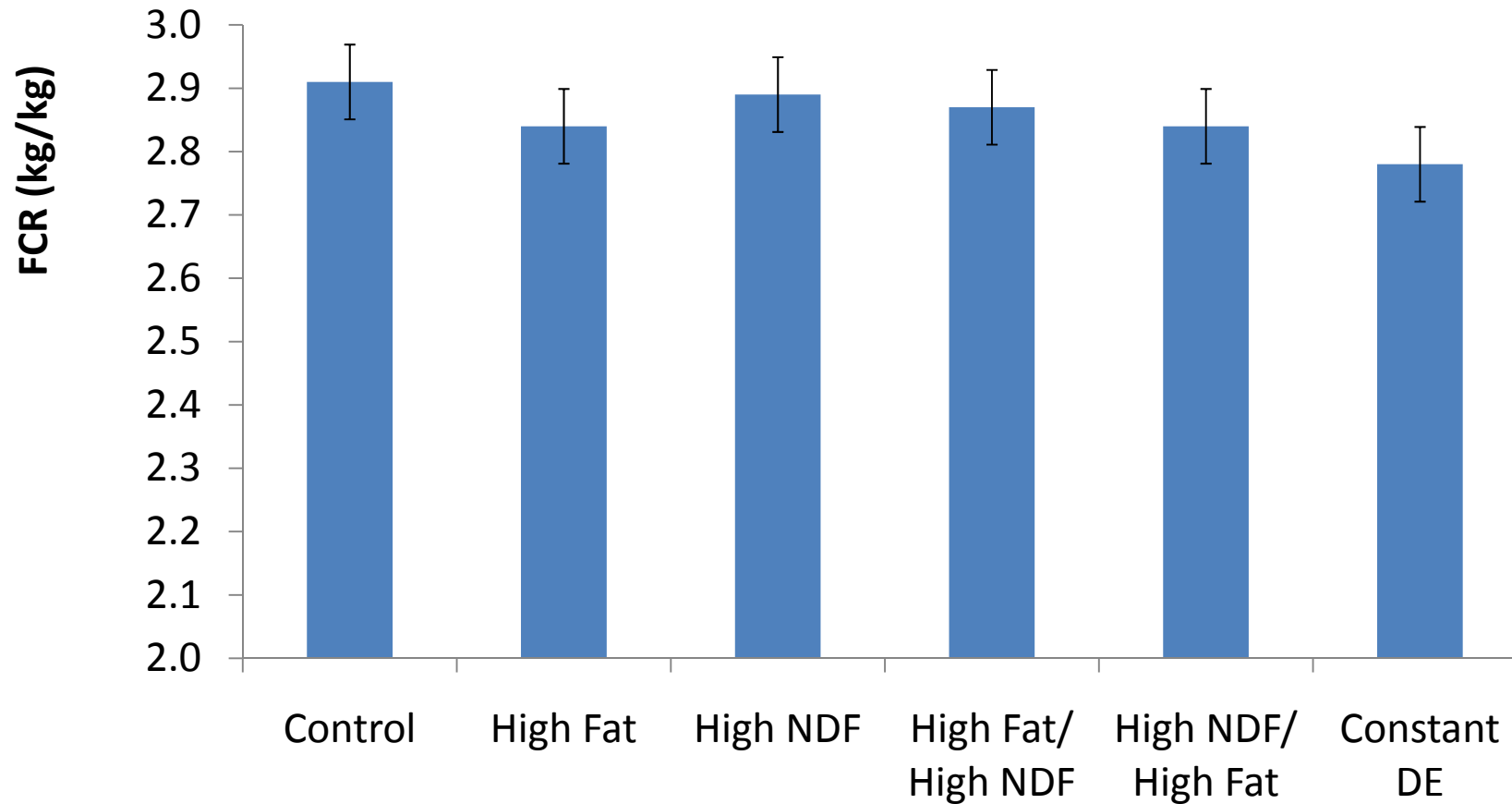


Feed intake 21 to 42 days



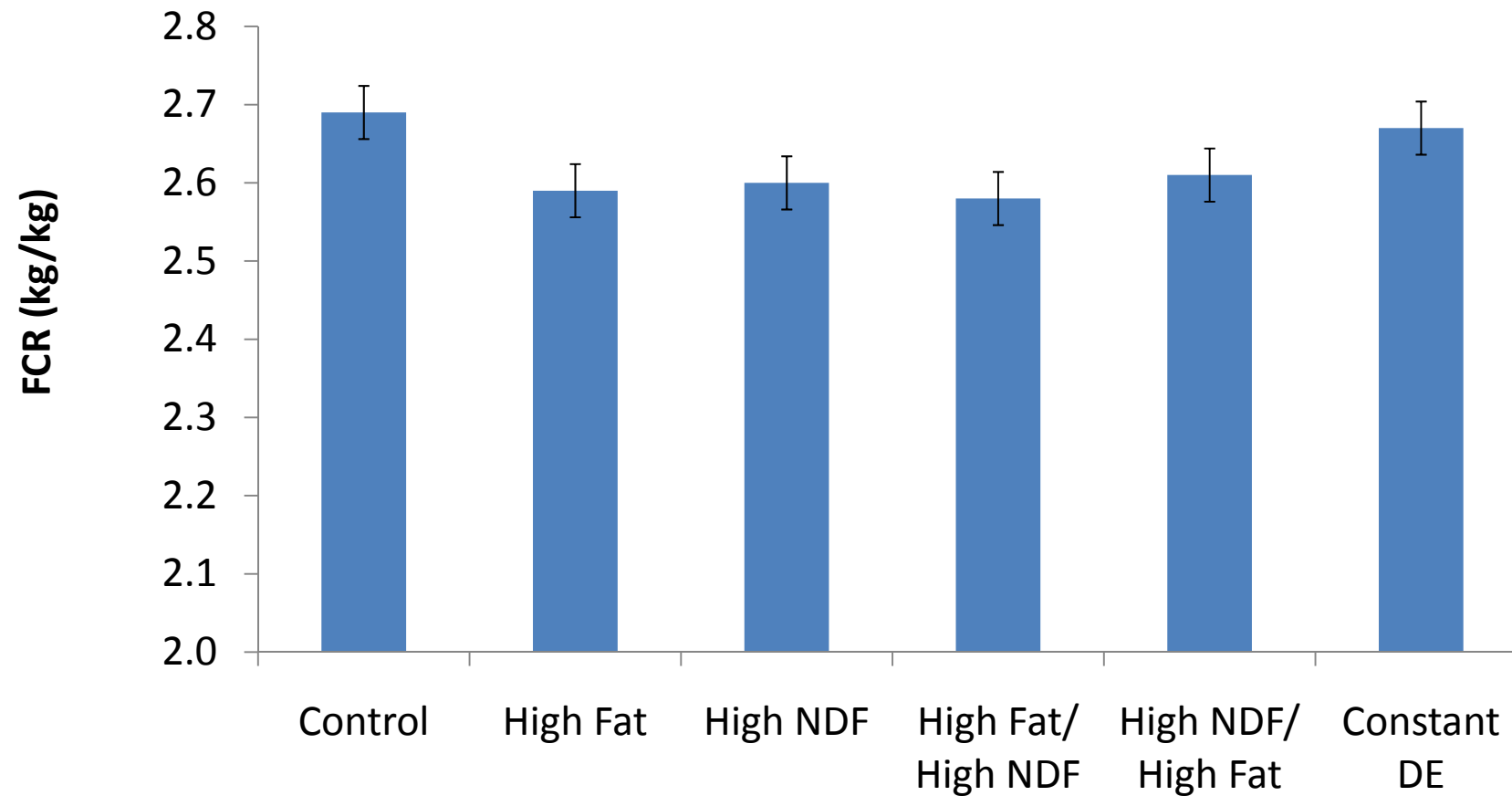
FCR 21 to 42 days

P=0.34



FCR 0 to 42 days

P=0.006



Results 0 to 42 days

- No significant differences in feed intake
- No significant differences in daily gain

Carcass characteristics

	Control	High Fat	High NDF	High Fat/ High NDF	High NDF/ High Fat	Constant DE	P value Feeding strategy
Carcass weight	76.7	78.3	76.3	77.3	77.3	76.9	0.057
Carcass P2 (mm)**	9.2	9.1	8.6	8.6	8.6	8.9	0.005
% pigs P2 >12 mm	9.6	6.7	4.6	3.4	4.7	4.9	0.095
Dressing percentage	77.0	77.1	76.1	76.6	76.7	76.7	0.098

** Carcass weight included as covariate

Economic analyses - Males

	Control	High Fat	High NDF	High Fat/ High NDF	High NDF/ High Fat	Constant DE
Total feed costs (\$/pig)	34.8	36.2	34.6	34.2	34.8	34.3
Return on carcass weight (\$3.50/kg)	270.1	276.6	267.3	273.3	272.2	269.8
Net return (\$/pig)	234.3	239.2	231.6	238.9	236.8	234.9
Net return in margin (\$/pig)		4.88	(-2.68)	4.61	2.53	0.59

Economic analyses – Females

	Control	High Fat	High NDF	High Fat/ High NDF	High NDF/ High Fat	Constant DE
Total feed costs (\$/pig)	35.0	35.4	35.0	35.6	36.5	35.0
Return on carcass weight (\$3.50/kg)	266.9	271.9	266.9	268.4	269.3	268.8
Net return (\$/pig)	229.4	235.0	231.2	231.8	231.7	232.6
Net return in margin (\$/pig)		5.58	1.81	2.32	2.29	3.20

Conclusions

- Feeding high fat diets for the entire finisher period can improve feed efficiency & economic returns

Important considerations:

- Genotype
- Season





Acknowledgements

- **Pork CRC**
- **Technical staff in the Rivalea Research and Innovation Unit**