

## Research Abstract

### METABOLISM AND NUTRITION

#### **The interaction of dietary flaxseed and length of feeding on the fatty acid profile of subcutaneous fat in grower-finisher pigs**

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#### Purpose :

- To determine the optimum combination of level and length of feeding of extruded flaxseed to achieve a desired concentration of ALA in subcutaneous fat.
- To determine if the consistency of the elevation of ALA in the subcutaneous fat is affected by either the amount of flaxseed in the diet or the length of feeding.

#### Methodology :

- 40 gilts and 40 barrows were fed either the control diet for 12 weeks, or a diet containing 10, 20, or 30% LinPRO (equivalent to 5, 10 and 15% extruded flax) for 12, 8, or 4 weeks prior to fat sampling.
- Analysis included:
  - Effect of diet
  - Length of feeding
  - Gender, and
  - All interactions between the above effects

#### Results :

- In all feeding levels and durations, the Omega-6:Omega-3 ratio was improved with LinPRO compared to pigs fed the control diet.
- Males were found to have an increased ADG and ADFI, and a decreased FCE. There was a significant increase in backfat of the pigs as more LinPRO was included, as well as when feeding duration increased.
- ALA was significantly higher in the pigs fed 30% LinPRO, with the highest levels being reached when fed at this level for 12 weeks. The consistency of ALA enrichment was at its highest at 12 weeks.

#### Conclusion :

- Enrichment of ALA in backfat is improved by increasing either the dietary concentration of flaxseed or the length of feeding.
- Maximal enrichment was obtained by feeding 30% LinPRO for 12 weeks.
- Consistency of the enrichment is improved with the length of feeding.