

A COMPARISON OF THE ILEAL DIGESTIBILITY OF NITROGEN IN
SUGAR-BASED DIETS FOR GROWING PIGS DETERMINED BY SLAUGHTER
OR CANNULATION TECHNIQUES

S.A. GEORGE*, R. ELLIOTT** and E.S. BATTERHAM*

Ileal digesta sampled from the intact pig at slaughter can be used to determine the ileal digestibility of nitrogen (N) and amino acids in cereal-based diets (Moughan and Smith 1987). The aim of this experiment was to determine whether ileal samples collected at slaughter could be used to determine the ileal digestibility of N in semi-synthetic sugar-based diets.

The three sugar-based diets (c. 650 g sugar/kg) contained 300 g/kg of either cottonseed meal, meat and bone meal or soya-bean meal and were allocated to 18 pigs of approximately 25 kg liveweight. Chromic oxide was used as a marker in all diets. After 10 days on the diet the pigs were sedated with Stresnil and injected intra-cardially with a lethal dose of sodium pentobarbitane. Samples of ileal digesta were then immediately removed from the final 20-40 cm of terminal ileum while the pig was in a surgical plane of anaesthesia.

The diets were also given to four pigs fitted with T-piece cannulae at the terminal ileum. After 10 days, samples of ileal digesta were collected at regular intervals during the eight-hour period following feeding. Samples were collected on two consecutive sampling days before diets were changed. Each diet was given to the four pigs in a randomised design. All samples were freeze-dried and N content determined by Kjeldahl analysis.

Samples large enough for chemical analysis (1-3 g dry matter) were collected from only four out of six of the slaughtered pigs on each diet. N digestibility results obtained by the slaughter (Slau.) technique were not significantly different ($P > 0.05$) from those obtained using the cannulation (Cann.) technique. However, variability of data was greater using the slaughter method.

Diet	Protein source	Ileal digestibility of N (%)		SEM		Co-efficient of variation (%)	
		Cann.	Slau.	Cann.	Slau.	Cann.	Slau.
1	Cottonseed meal	78.0	74.0	1.70	8.13	4.4	21.8
2	Meat and bone meal	71.0	64.0	2.00	5.91	4.4	11.8
3	Soya-bean meal	85.0	83.0	1.70	4.56	4.4	11.0

Variability in sample composition was greater using the slaughter technique. It was difficult to obtain a representative sample at slaughter using sugar-based diets since these diets were highly digestible and the flow of digesta was reduced and spasmodic. Therefore greater replication is required if the slaughter technique is to be used with such diets to allow for this variability.

MOUGHAN, P. J. and SMITH, W. C. (1987). *Anim. Prod.* 44:319.

* North Coast Agricultural Institute, Wollongbar, New South Wales 2480

** Dept. of Agriculture, University of Queensland, St Lucia, Queensland 4167