

ENZYME SUPPLEMENTATION OF LINOLA™ MEAL FOR GROWER PIGS

D. I. OFFICER and E. S. BATTERHAM

NSW Agriculture, Wollongbar Agricultural Institute, Wollongbar, N.S.W. 2477.

Linola is a low linolenic acid linseed developed by CSIRO to supply the edible oil market. The growth performance of pigs fed diets containing Linola meal is substantially lower than that of pigs fed diets containing soyabean meal (Batterham *et al.* 1991). The objective of this experiment was to see if nutrient digestibility in Linola meal could be improved with exogenous enzyme supplementation.

The basal diet contained (g/kg): sugar 547.5, Linola meal 400, dicalcium phosphate 30, soyabean oil 15, vitamins and minerals 5, chromic oxide 2 and Fuzone 200 0.5. There was 14.6 MJ/kg of digestible energy and 5.6 g/kg total lysine. The basal diet was supplemented with either phytase (supplied by Gist-brocades), or an enzyme cocktail containing xylanase, cellulase and pectinase (supplied by Finnfeeds), or both. The 4 diets were fed to 16 pigs (38 ± 1.5 kg liveweight) once daily for 7 days and ileal digestibilities determined by the slaughter technique (van Barneveld *et al.* 1991).

Overall nutrient digestibility was low in Linola meal and was significantly improved by supplementation with the enzyme cocktail and, to a lesser extent, phytase (Table 1). There was no significant effect of combining both supplements.

Table 1. The effect of enzyme supplementation on the apparent ileal digestibility of nutrients (proportion of total) in Linola meal for grower pigs

C, Cocktail containing xylanase, cellulase and pectinase; P, Phytase

Parameter	Treatments				Statistical analysis			s.e.m.
	Control	C	P	C + P	C	P	C x P	
Dry matter	0.53	0.64	0.60	0.69	**	*	n.s.	0.024
Nitrogen	0.53	0.71	0.65	0.75	**	*	n.s.	0.035
Lysine	0.59	0.76	0.71	0.80	**	*	n.s.	0.031
* $P < 0.05$; ** $P < 0.01$; n.s. not significant.								

The response in nitrogen and lysine digestibility to phytase is possibly due to the release of amino acids bound in phytate linkages. The response to the enzyme cocktail indicates that these exogenous enzymes were successful in improving Linola meal nutrient digestibility, possibly through an increase in fibre digestibility.

BATTERHAM, E. S., ANDERSEN, L. M., BAIGENT, D. R. and GREEN, A. G. (1991). *Anim. Feed Sci. Tech.* 35: 181-90.

VAN BARNEVELD, R. J., BATTERHAM, E. S. and NORTON, B. W. (1991). In 'Recent Advances in Animal Nutrition in Australia 1991'. (Ed. D. J. Farrell.) p. 22A (UNE: Armidale).