VETCH SEED AS A FEED FOR SHEEP

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Vetches are among several genera of legumes being increasingly introduced into crop rotations in South Australia where they are often more suited than lupins to the mainly alkaline soils of the cereal zone. While lupins are well established as a feed for sheep, little is known about the feed value of vetch seed. A study carried out to determine the potential feed value of whole and milled vetch seed by sheep is reported.

Two groups of four adult Merino wethers weighing 51.2 ± 0.4 kg (mean + s.e.) were individually housed in metabolism cages and fed 600g/day of whole or hammermilled (6mm screen) seed of common vetch (Vicia sativa, cv. Languedoc). The diets also contained an additional 0.5% salt and 0.5% limestone. Following seven days of introductory feeding, the wethers were fed at 0900 hours daily for 18 days. Faeces and urine were collected on the last six days of feeding. The vetch seed contained 9.8% moisture and (DM basis) 97.0% organic matter (OM), 21.9% neutral detergent fibre (NDF), 4.4% crude fibre (CF), 6.9% acid detergent fibre (ADF), 28.8% crude protein (N x 6.25), 4.4% starch, 1.1% crude fat and 18.7 MJ gross energy (GE)/kg DM.

Despite a hard seed testa, sheep ate the whole seed very rapidly (6-10 minutes), but took twice as long to eat the milled seed. One sheep fed the milled seed scoured profusely so was removed from the experiment. The digestibilies of various feed components and the nitrogen (N) retention by sheep are shown in the Table.

	Apparent digestibility (%)					N retention
	DM	OM	ADF	GE	N	(g/day)
whole seed	82.7	84.1	61.5	85.4	77.9	5.7
milled seed	84.0	85.7	53.7	83.7	78.7	3.2
s.e.m.	0.6	0.6	4.5	0.6	0.9	1.8

The vetch seed contained 15.9 MJ of apparent digestible energy (DE)/kg DM compared with a value of 17.3 ± MJ 0.03 (s.e.) kg DM for lupins in an extensive survey conducted in Western Australia by Mackintosh et al. (1985). Vetch seed had a similar cell wall (NDF) and crude protein content as lupins but 80% less crude fat. Mackintosh et al. (1985) demonstrated a remarkedly small variability in the chemical composition of lupins but it is not known whether a similar uniformity exists in vetch seed and wider testing is warranted once vetch crops become more widely grown.

It is concluded that common vetch seed has a feed value aproaching that of sweet lupins. Milling did not significantly improve the feed value of vetch seed but may be a useful technique for slowing feed intake allowing more equal sharing of feed where sheep compete for a restricted supplement (Foot and Heazelwood 1988).

MACKINTOSH, J.B., CALLADINE, A. and VARIS, G.B. (1985). "The Chemical composition and nutritive value of sweet lupin seed". (The University of Western Australia).

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