Summary only

DIGESTIBILITY OF PROTEIN-EXTRACTED FORAGES

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AS PART of a DSIR project on leaf protein production, residues from protein-extracted lucerne and 'Grasslands Tama' westerwolds ryegrass were fed to Romney sheep in digestibility experiments at Lincoln.

Using the Pirie extraction process which removes 50% of the total nitrogen, yields of 2,340 kg/ha of crude protein have been obtained from irrigated lucerne yielding 19,770 kg/ha dry matter. The fibrous residue comprised 70% of original dry matter component of crop yield. This was fed (a) after oven-drying at 80° C (b) wet from the belt press at 23% dry matter, or (c) as silage made by vacuum pack process with addition of molasses and sulphuric acid (Table 1).

TABLE 1: PROTEIN-EXTRACTED FORAGES PEN FED TO ROMNEY SHEEP

Preparation (Residue)	*Feeding*	*Intake (g DM/kg) $LW^{0.73}$*	*% Appar. Dig. (OM)*	*Calc. DOM Reqd (kg/day)*	*Actual DOM eaten (kg/day)*
Dried lucerne	(restricted)	46.9	62.6	0.470	0.497
Dried lucerne	(*ad lib.*)	81.5	63.6	0.502	0.934
Wet lucerne	(*ad lib.*)	85.5	72.8	0.520	1.132
Lucerne silage	(restricted)	35.1	69.5	0.520	0.430
Lucerne silage	(*ad lib.*)	98.0	64.9	0.484	1.018
Dried ryegrass	(restricted)	48.8	78.8	0.451	0.599
Dried ryegrass	(*ad lib.*)	78.0	70.4	0.448	0.877

Chemical analyses of feed and faeces indicated low but positive "balances" for calcium, sodium, magnesium and phosphate. Efficient use of lucerne might be for extraction for leaf protein concentrate with the residue contributing to a ruminant ration. Extraction from cool-season-active 'Grasslands Tama' westerwolds ryegrass offers the economies of all-year-round operation of the processing plant.

ACKNOWLEDGEMENT

L. R. Fletcher, Grasslands Division, was responsible for conducting the digestibility experiments.