LEAF CONTENT AND SHORT-TERM EATING RATE IN STRAW DIETS

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Variations in the leaf content of roughage diets have been linked to differences in voluntary feed intake, ration selection and animal performance (Capper et al. 1986). Whether these differences are related to differences in the physico-chemical characteristics of leaf and stem components affecting the digestion of these diets or to some acute olafactory or visual stimulus to intake is not well understood. This study was undertaken to assess the palatability of barley straw mixtures as estimated by short-term eating rate responses.

Cross-bred ewe lambs c. nine months of age, were selected from pasture and adapted to diets consisting of a barley straw:oaten hay mixture (3:1) fed ad libitum, either alone or supplemented with either barley grain (100g/day) or fish meal pellets (50g/day). The supplements and hay mixture were fed daily to permit monitoring of ration intake and composition. The fish meal pellets were prepared from milled lucerne chaff and fish meal (3:1 w/w) extruded through a 10mm die. Eleven days after introduction of supplements, lambs were randomly assigned to test diets consisting of 1:0, 1:1 and 0:1 combinations of stem and leaf fractions produced by repeated separation of barley straw through a combine harvester. The leaf content of the 1:0 and 0:1 stem:leaf mixtures was 15% (sem 1.8) and 76% (sem 0.85), respectively. Leaf mixtures were offered in 200 g lots to individual lambs for 3 x 20 minute intervals commencing at the usual feeding time (0900 h). Eating rate was assessed as the average quantity of straw (gDM) consumed over the three test intervals.

Diet		Leaf mixture			
		1.0	1:1	0:1	sem
Nil supplement	(n=11)	40	46	35	3.6
Barley grain	(n=9)	43	44	35	3.9
Fish meal pellet	(n=7)	40	53	48	4.5
Mean		41a	47b	39a	2.3

Each diet showed highest eating rates ($P<0.05$) for the 1:1 leaf mixture. Eating rates for the fish meal diet (47 g/20 min; sem 2.7) tended to be higher ($P<0.1$) than those recorded for the nil supplement and barley diets, which were 40 and 41 gDM/20 min (sem 2.2), respectively. Leaf content is clearly not the sole determinant of eating rate/palatability but the variations between leaf mixtures and diets are sufficiently great that further investigation of the 'attractiveness' of individual ration components is warranted. The apparent reduction in eating rate at the highest level of stem:leaf inclusion (0:1) suggests that simple indices of nutritive value based on ration morphology may not adequately account for differences in ingestive behaviour that can influence voluntary feed consumption.

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