

Interactions Between Leaf/Stem Content of Straw and Responses of Sheep to Supplements

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Voluntary intake of cereal straws is related to leaf/stem ratio, and intake may be affected more by this characteristic than by digestibility or content of essential nutrients (Capper *et al.* 1986). The present experiment examined whether there were interactions between leaf/stem ratio of straw and responses to supplements by young sheep.

Twenty-four BLxM ewe lambs (26-28kg) were, during two consecutive 28d periods, fed eight diets. Diets were based on separated barley straw fractions consisting predominantly of either leaf or stem fed ad libitum and 1g/kg LW of lucerne hay. These straw fractions were fed alone, or with supplements of N/S (a solution of urea and sodium sulphate (5: 1 w/w) mixed with the straw), B/N/S (whole barley grain fortified with urea and sodium sulphate solution) or fishmeal (FM). Straw fractions contained approximately 80% leaf or stem fraction, respectively.

When the basal roughage contained a high proportion of barley straw stem, supplements had no effect on intake of straw, although intakes of total DM and digestible organic matter (DOM) were increased substantially. When the basal diet contained a high proportion of leaf, roughage intake was not changed by the B/N/S supplement, but was increased by 19-27% by the N/S and FM supplements. Supplementation increased DOM intake by 41-68% and 5-57%, for high leaf and high stem diets, respectively.

There was an interaction between the leaf/stem content of the straw basal diet and the response to various types of supplements. Sheep fed diets high in leaf could increase intake of roughage in response to N/S and FM supplements. Sheep fed diets high in stem could not increase their intake in response to supplements.

References

Capper, B.S., Thomson, E.F., Rihawi, S., Termanini, A. and MacRae, R. (1986). *Animal Production*; 42: 337-342.

Table 1. Intake and productivity of diets based on leaf or stem straw fractions and supplements.

Measurement	High leaf diet				High stem diet					Significance		
	Nil	N/S	B/N/S	FM	Nil	N/S	B/N/S	FM	sd	D	S	DxS
Intake (g/d)												
Roughage DM	500	634	449	594	403	391	404	414	37	***	*	*
Supplement DM	0	0	100	98	0	0	103	104	-	-	-	-
Total DM	500	634	549	716	403	391	507	514	38	***	**	*
DOM	232	326	330	389	195	205	294	306	19	***	***	ns
LW change (g/d)	-98	-31	-2	72	-105	-80	-32	38	14.0	***	***	ns
Wool (mg/patch/d)	50	62	74	146	63	60	68	122	7.0	ns	***	ns

D, basal roughage diet; S, supplement