

## The differential effects of supplementation with fodder from different tree legumes on feed intake and digestibility of nutrients in sheep fed on maize stover

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Maize stover has low protein content and poor digestibility due to high neutral detergent fibre content. Supplementation with affordable forage legumes is expected to improve both intake and digestibility.

Fodder from *Leucaena leucocephala*, *Acacia boliviana*, *Cajanus cajan* and *Calliandra calothyrsus* was used as a supplement at four levels (0, 50, 100 and 150 gDM/day) for sheep on a basal diet of maize stover. Each legume was given to a group of four animals (mean weight of animals in each group was 18 kg with se 0.71) in a 4 x 4 latin square design with four 14-day periods. Measurements of total dry matter intake (DMI) and urine and faecal output were taken during the last seven days of each

period. Digestibility of dry matter (DMD) and organic matter (OMD), nitrogen balance (NB) and microbial protein yield (MPY) (using the purine derivative technique) were estimated. Supplementation improved the dry matter intake, nitrogen balance, microbial nitrogen yields and digestibility of dry matter and organic matter.

The legumes used for supplementation were ranked according to their positive effects on feed intake, decreasing in the order : *L. leucocephala*, *A. boliviana*, *C. calothyrsus* and *C. cajan*. It is suggested that work should be done to determine the link between anti-nutritional factors and animal response to supplementation.

Response	Legume used as supplement*				SED
	<i>L. leucocephala</i>	<i>C. cajan</i>	<i>A. boliviana</i>	<i>C. calothyrsus</i>	
DMI (g/d)	515	461	507	479	12.22
NB (g/d)	1.00	0.61	1.07	0.57	0.22
MPY (g/kg DOMR)	9.62	8.09	8.87	7.67	0.42
DMD (%)	49.0	52.6	52.0	48.5	1.09
OMD (%)	52.8	55.9	54.9	52.0	1.10

\*Results represent the effects of all three levels of supplements