

SUPPLEMENTATION OF CORRIEDALE EWES WITH MAIZE DURING THE LAST WEEK OF PREGNANCY INCREASES PRODUCTION OF COLOSTRUM

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Murphy *et al.* (1996) fed ewes with lupins in the final week of gestation to enhance secretion of colostrum. This strategy applied to ewes in Uruguay should also increase their production of colostrum. Lupins are high in CP and ME but are unavailable in Uruguay. On the basis that it is probably the high ME of lupins that provides the substrates for improved production of colostrum, we argued that maize grain, of similar ME to lupins, would be as effective as lupins.

Sixty Corriedale ewes, 3-5 years old, were selected after synchronised mating and scanning for pregnancy. They were penned 3 weeks pre-lambing and allocated to 4 groups (Table 1). The weight and composition of colostrum from half-udder samples were measured at parturition and at 1, 3, 6 and 10 h *post partum*. The colostrum was analysed for components using a MilkoScan 50.

Table 1. Treatment groups

n	Mean wt. (kg)	Lambs	Basal diet (CP 18.5% DMD 60%)	Supplement		
				Treatment	Days	
15	48±1.4	Single	Lucerne hay 1kg/d	Unsupplemented	-	SU
15	48±2.0	Single	Lucerne hay 1kg/d	750 g cracked maize	8.2	SS
15	53±1.9	Twin	Lucerne hay 1.4kg/d	Unsupplemented	-	TU
15	52±1.7	Twin	Lucerne hay 1.4kg/d	750 g cracked maize	7.9	TS

At lambing, the supplemented ewes had accumulated more than double the colostrum of unsupplemented ewes and the response was greater but not significant in twin bearing ewes (Table 2). The weight of colostrum after lambing remained higher in supplemented than in unsupplemented ewes but three hours after lambing it was the same for single and twin bearing ewes. The total colostrum solids in the first 10 h was 248 g in supplemented ewes and only 152 g in unsupplemented ewes. Most of this difference was due to significant differences at lambing ($P=0.006$), because there was no difference in total solids after 6 hours (27 vs 21 g). The percentage of lactose was also higher at lambing in supplemented ewes (2.6 vs 1.6%; $P=0.002$) but did not differ six hours later (3.2 vs 2.8%). The birth weights of the lambs were similar for supplemented and unsupplemented ewes.

Table 2. Mean and (SEM) for colostrum accumulated at parturition, and secreted 0-1, 1-3, 3-6 and 6-10 hours after parturition and birth weight of lambs from ewes supplemented or not with corn grain

Attribute	Treatments				Significance	
	SS	SU	TS	TU	Supplement	Litter size
Colostrum (g)					P =	P =
At parturition	339 (53.3)	145 (26.0)	536 (126.2)	197 (40.0)	0.00	0.09
Parturition to 1 h	120 (23.5)	77 (14.1)	203 (34.8)	102 (18.6)	0.00	0.02
1 - 3 h	79 (22.4)	66 (9.3)	163 (39.9)	90 (14.4)	0.02	0.07
3 - 6 h	80 (18.5)	69 (14.0)	147 (42.2)	96 (16.6)	0.06	0.20
6 - 10 h	103 (12.7)	117 (20.6)	201 (38.0)	145 (27.5)	0.02	0.42
Birth weight (kg)	4.1 (0.16)	4.0 (0.17)	3.3 (0.11)	3.2 (0.11)	0.28	0.00

Strategic supplementation of Corriedale ewes with maize increased the weight of colostrum at parturition and during the first 10 h. The colostrum and total solids available to the lambs during the first 10 h was nearly doubled if the ewes were fed maize for 8 days prior to lambing. The strategic supplement did not increase the birth weight of the lambs but enabled them to have access to almost double the amount of colostrum for early nutrition. Maize grain was as effective as lupins, which suggests that the ME supplied by both grains is the key to them stimulating production of colostrum.

MURPHY, P.M., MCNEILL, D.M., FISHER, J.S. and LINDSAY, D.R. (1996). *Anim. Prod. Aust.* **21**, 227-30.

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