

IMPROVING DOE NUTRITION IMMEDIATELY PRIOR TO KIDDING INCREASES KID SURVIVAL

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The survival of kids in the immediate post-natal period is affected by many different factors, including birth weight and type, sex, the supply of colostrum and milk available to the kid, and environmental stresses at the time of kidding. Norton *et al* (1984) found that while milk production was increased when pregnant does were fed supplements 1 month before and 1 month after kidding, pre-kidding supplementation alone had no significant effects on either milk production or kid birth weights. Kid survival was not measured in these studies. Recent studies by Milton *et al* (2002) with pregnant ewes have found that pre-lambing maize supplements increased colostrum production and improved the subsequent survival of lambs. It is well known that, while Australian goats are prolific breeders, producing high proportions of twins, the survival of these twins is often poor. This paper reports the effects of pre-kidding supplementation of Australian cashmere does on the post-natal survival of kids.

The experiment was conducted at the UQ Mt Cotton research farm in southeast Queensland in late 2002. Ninety six pregnant does were randomly assigned to 1 of 4 groups, which were then subjected to 1 of 4 treatments: 1) grazing Pangola grass (PG) pasture (control), 2) grazing PG pasture and supplemented (360 g/doe/d) with a 50:50 mixture of kibbled sorghum grain and cotton seed meal (supplement) for 2 weeks before kidding (pre-natal supplementation), 3) grazing PG pasture and given 50:50 supplement (360 g/doe/d) for 2 weeks before and 4 weeks after kidding (pre- and post-natal supplementation), and 4) grazing irrigated ryegrass pasture (ryegrass pasture). The supplements were available from covered troughs in each paddock. Does were weighed on 23 August (about 2 weeks before kidding), 20 September, 11 October and 6 December (weaning). All kids were identified with their dams, tagged and weighed at birth, and at average ages of 17, 38 and 77 (weaning) days of age. The significance of the effects of treatment, kid birth type and sex were tested by analysis of variance, and treatment effects on mortality determined by a Chi-squared test.

Table 1. The effects of doe nutrition on kid birth weights and survival to 16 days of age.

Treatment	Pre-kidding Doe wt (kg ± SE)	Kids born/ doe kidding	Kid birth Wt (kg ± SE)	Doe wt change (kg) Pre-kidding to 16 d post- kidding	% Mortality Birth to 16 d
Grazing Pangola grass (PG)	38.2 ± 1.50	1.96	2.60 ± 0.07	0.4 ± 0.56 ^a	17.8 ^a
PG + pre-natal supplement	35.5 ± 1.34	1.84	2.36 ± 0.07	-1.8 ± 0.63 ^b	2.9 ^b
PG + pre- and post-natal supplement	33.6 ± 1.32	1.84	2.56 ± 0.08	1.8 ± 0.64 ^c	8.6 ^b
Grazing Rye grass	35.0 ± 0.98	1.86	2.76 ± 0.08	-0.1 ± 0.57 ^a	5.1 ^b

Values within a column with the same superscript are not significantly different (P=0.05)

Table 1 shows that, while there were no significant effects of treatment on doe weights 2 weeks before kidding, the treatments did significantly affect doe weight changes following kidding. Does given supplements before and after kidding had a net gain in weight, those maintained at pasture maintained weight, while those given only the pre-natal supplement lost weight. There were no significant effects of treatments on either the proportion of multiple births or average kid birth weights, but all forms of supplementary feeding, including the grazing of high quality ryegrass pastures, dramatically improved the survival of kids to 16 days of age. These results suggest that, as found in sheep, improved nutrition just before kidding stimulates doe colostrum production, which, when consumed by kids, increases the immediate post-natal survivability of kids born to these does.

MILTON, J.T.B., BANCHERO, G.E., QUINTANS, G. and LINDSAY, D.R. (2002). *Anim. Prod. Aust.* **24**, 273.

NORTON, B.W., LAMBERT, A. and RESTALL, B.J. (1984). *Proc. Aust. Soc. Anim. Prod.* **15**, 276.

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