Lamb Number and Shelter Type Influence Ewe Movement at Lambing

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Two shelter types and two litter sizes were compared in an experiment at Ladysmith, NSW. The treatment combinations were; shrub belts with twin bearing ewes (Twin-S), Hessian rows with twin bearing ewes (Twin-H), and Hessian rows with single bearing ewes (Single-H). The shrubs belts were each 10 m wide and had an average height of 2.5 m. Hessian shelters were 1 m high. Shelter was placed on the northern, western and southern boundaries of each paddock. The distance between parallel shelter-belts was determined by the height of the shelter belt and equated to a 20 times height spacing, with shrub rows 50 m apart and Hessian rows 20 m.

To allow sheep to pass from one section of the paddock to another, gaps were created in the shelter belts. The internal shrub row had a single centrally located three metre wide gap while the internal Hessian rows had 2-3 m gaps placed every 25-30 m with a 6 m gap at the eastern end of each row. No gaps were placed in any of the boundary shelter belts except to enable human access between paddocks.

GPS collars were placed on 21 oestrus synchronised ewes during two deployments. In the first deployment, collars were placed on four ewes in Single-H and Twin-S and three in Twin-H while in the second deployment collars were placed on four ewes in Single-H and three in Twin-S and Twin-H. The GPS collars were configured to log at 30 second intervals recording latitude, longitude and time. Four 24 hour periods were selected for analysis of each collar deployment (Broster *et al*. 2010).

Ewes in the Twin-H treatment travelled more than ewes in the other two treatments (P<0.001) (Table 1). Whilst the ewes in this treatment travelled more than the other treatments within each period the difference was greatest at Period D when the average distance travelled by ewes in this treatment was nearly 13 kilometres, 72% more than the other twin lamb treatment (P<0.001) (Table 1).

Table 1: Distance (m) travelled by ewes for the four 24 hour periods before and after lambing (A-5 days before first lamb, B–24 hours pre lambing, C-24 hours post lambing, D-minimum 3 days post lambing)

	Period				
	Pre-Lambing		Post-Lambing		
Treatment	A	B	C	D	Mean
Single-H	7777 [12]	7928 [12]	11061 [345]	5935 [1]	8175 [a]
Twin-H	10526 [34]	10530 [34]	11219 [45]	12838 [5]	11278 [b]
Twin-S	9092 [23]	7142 [12]	7951 [12]	7428 [12]	7903 [a]
Mean	9132	8533	10077	8734	

[a,b] Means within a column with different letters differ at P<0.001 (s.e.d. = 522)
[1,2] Means with different numbers differ at P<0.001 (s.e.d. = 1044)

That both Hessian treatments (Single-H and Twin-H) travelled further than Twin-S immediately after lambing (Period C) suggests that shelter type influenced ewe movement. The difference between Single-H and Twin-H for Period D suggests that litter size also affects the distance ewes with newborn lambs will travel daily. That there was always a difference in distance travelled between Twin-H and Twin-S immediately before and after lambing (Periods B, C and D) suggests visual distance has some influence on the level of ewe movement.

That the distance travelled between Periods B and C did not increase for Twin-H but shelter crossings did suggests that the newborn twin lambs are using the shelter and being lost to the sight of the ewe. The combination of both an increase in distance travelled and shelter crossings in Single-H suggest that when newly born single lambs are more active than twins (Broster *et al.* 2010).

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