

South Otago

South Otago modelling methods

Shelter was the main emphasis of the South Otago group. Mitigations chosen were reducing wind run by 50 and 100%. Shelter modelling did not attempt to account for variations in wetting of the lamb or changes in soil conditions.

Only a single site was chosen for the South Otago model to represent the majority of the region. Wind run data from the Balclutha meteorological station (lat -46.273, long. 169.739, alt. 6 masl) for the period 1980-1999 was used to calculate average wind speed with minor missing data events being replaced with data from similar periods in other years.

Results

Of major importance to this region was the provision of shelter. Of note in the regional comparisons was the high degree of variability at this site. Thus the provision of shelter is important to help reduce that variability. Providing both partial (50%) and full (100%) shelter from the wind increased the number of live lambs by 81 and 145 per 1000 ewes respectively (Table 1). These indicative values provide significant incentives to investigate the use of shelter in this environment. Planting of effective shelter will provide permanent benefits in lambs survival that may also have benefits in pasture production and carbon sequestration. Of interest are the effects of shelter on the ewe before lambing as well as the lamb at lambing. Reducing the climatic stress of heat loss on the ewe has a greater impact on lamb survival than that on the lamb at birth. This may be due to greater duration of exposure that is applied.

Variations in mating date before the current standard of 16 April provided no change in the number of live lambs (Table 1).

Extra feeding did provide some relief from lamb losses, though was more variable than providing a similar mitigating effect with extra shelter (Table 1).

Table 1. South Otago Rolling

South Otago					
Scanning percentage = 184%	Time				Isd
	Present	Future 1	Future 2	Future 3	
Lambs lost (exposure of the ewe)	259	252	247	242	10.2
Lambs lost (exposure of the lamb)	136	133	132	130	4.1
Live lambs per 1000 ewes lambing	1444	1454	1460	1467	14.2
	Feeding				
	Standard	Plus 0.2 kg DM		Isd	
Lambs lost (exposure of the ewe)	290	210		7.2	
Lambs lost (exposure of the lamb)	129	136		2.9	
Live lambs per 1000 ewes	1420	1493		10.0	

lambing

	Mating Date			lsd
	6-Apr	11-Apr	16-Apr	
Lambs lost (exposure of the ewe)	248	252	251	8.8
Lambs lost (exposure of the lamb)	133	134	131	3.5
Live lambs per 1000 ewes lambing	1459	1453	1457	12.3
Shelter				
	0%	50%	100%	lsd
Lambs lost (exposure of the ewe)	290	231	171	5.1
Lambs lost (exposure of the lamb)	129	107	83	2.0
Live lambs per 1000 ewes lambing	1420	1501	1585	7.1