

Management to improve lamb survival

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Why do lambs die?

Cause of death	% of all deaths	
Starvation/exposure/mismothering/ lambing difficulty	}	80
Primary predation	}	20
Infection		
Deformities		
Other		

Target the major causes to improve survival

Adequate nutrition is critical

- Condition score 3.0
- 1200 kg DM/ha + (green)

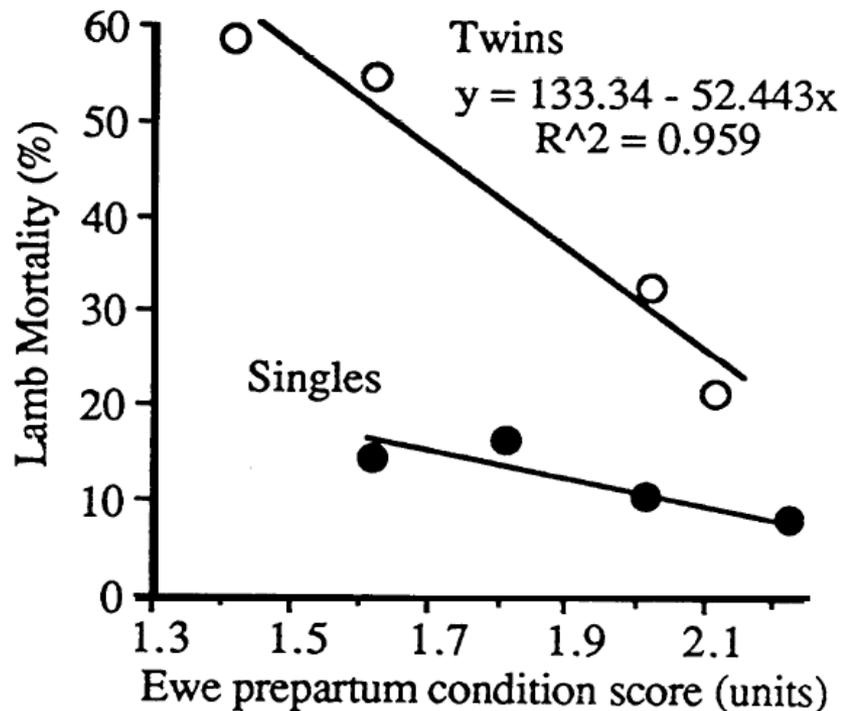


Fig. 2. Mortality of twin but not single lambs was inversely related to condition score of ewes prepartum.

Source: King et al (1990) ASAP 18, 272



Short-term feeding to increase colostrum

- 0.5 kg/ewe/day (lupins, maize, barley) for 7 days before lambing ↑ colostrum
- 7 days before + first 7 days of peak lambing ↑ survival by 7%+
- Ineffective where ample green pasture
- Response is variable - Calculate cost vs extra lamb value



Is exposure to weather a risk?

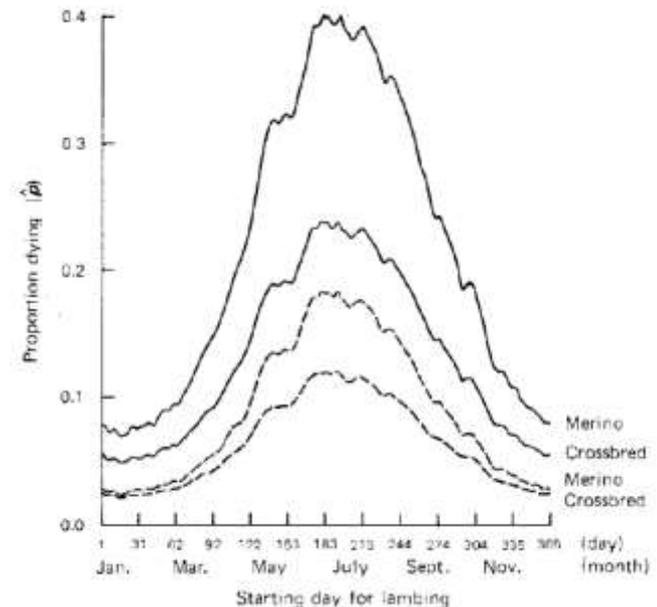
- Exposure contributes to 60% of lamb deaths (SME)
- Hot weather? Provide shade, minimise distance to feed/water
- Cold, wet, windy weather:
critical level: chill index $> 1000 \text{ kJ/m}^2 \cdot \text{hour}$



Proportion of lambs dying due to chill at different lambing dates at Ginninderra

— Twins
--- Singles

Source: Donnelly et al (1984) AJAR

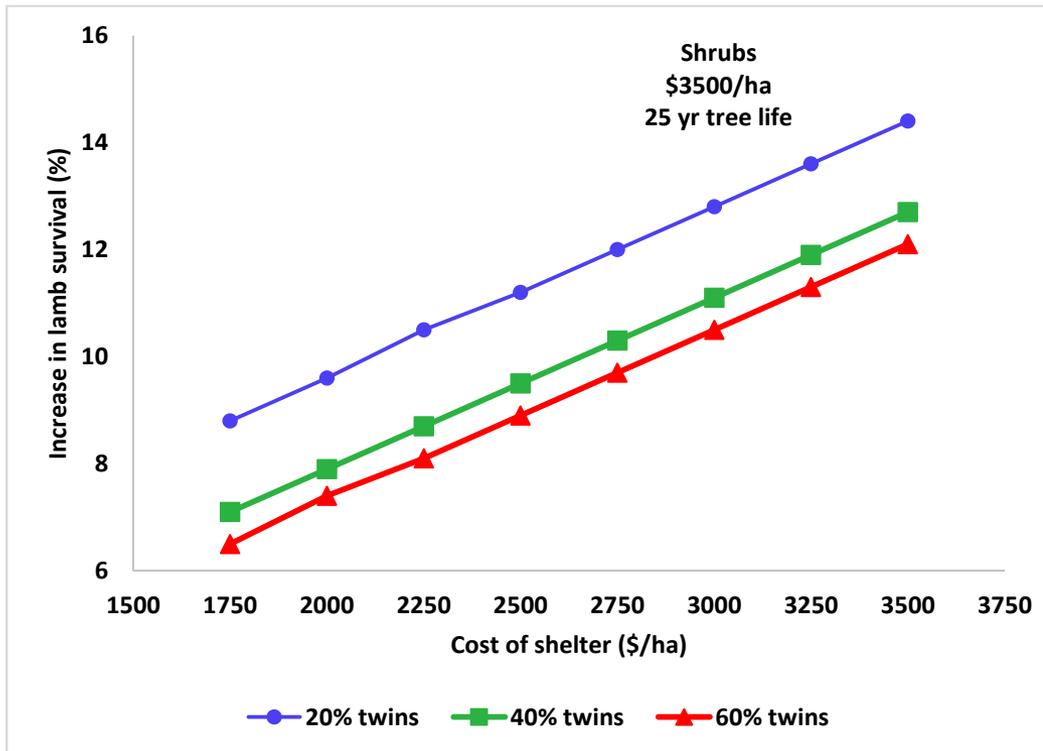


Can shelter from wind improve survival?

- Paddock shelter alters *wind speed*, not rain or temperature
- Lambing in cold, windy weather
- Benefits more likely in twins, Merino
- At Tarcutta (Jul/Aug):
 - Shrub shelter 77% survival of twins, hessian 70%
 - No increase in single lambs
- At Hamilton: 50% increase in survival with tall grass rows
singles and twins
- Shearing pre-lambing?

Economics of shelter

- The profitability of shelter depends on the cost of shelter, the twinning rate, and how much survival is increased



Percentage increase in lamb survival required to obtain a positive NPV from shelter

Base survival 60%

(Source: Broster 2014)

Natural shelter can be cheap

Consider opportunity costs of lost grazing



Does high stocking density reduce lamb survival?

- 14.3 ewes/ha or 143 ewes/ha - same lamb survival (Winfield 1970)
- 2.9 ewes/ha to 23.9 ewes/ha – same lamb survival but optimum flock size 400 ewes (Kleemann et al 2006)

But...

8 or 15 twin-bearing ewes in 0.5ha =	16 ewes/ha	30 ewes/ha
Proportion lamb survival of live births	0.83 a	0.63 b

Source: Robertson et al (2012)

- AWI currently funding mob size research

Maternal experience: maidens 10% lower survival

Can lamb survival from maiden ewes be increased through pre-lambing exposure to adult lambing ewes?



	Exposed	Not exposed
Proportion lamb survival	0.53	0.61
Lambs marked/ewe	0.71	0.78

Source: Robertson et al. in press

Lamb maidens in separate paddocks from mature ewes.

Conclusions

- Relatively simple management changes can improve lamb survival
- Target management for specific conditions
- Consider the cost: benefit of strategies, and opportunity costs

An alliance between Charles Sturt University and
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