

# REPRODUCTIVE WASTAGE IN SOUTH AUSTRALIAN COMMERCIAL MERINO FLOCKS: ASPECTS OF MANAGEMENT

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Reproductive performance of the Australian Merino is low. In South Australia, for example, the average lamb marking percentage is 77 with virtually no improvement over the last 40 years. To investigate the problem we determined sources of reproductive loss in South Australian commercial Merino flocks, and related these sources of loss to factors amenable to managerial change.

In the first and second year of a 4-year study 10 and 16 mature South Australian Merino flocks, respectively, were examined for sources of reproductive wastage (Kleemann *et al.* 1991). Sources of loss (Table 1) were related by regression analysis to factors that operate at mating. Ovulation rate (OR), liveweight (LW; kg), age (AGE; year), time of joining (TJ; month), paddock size (PS; ha), flock size (FS), mating period (MP; week), weaning to joining period (WJP; week), and testicular diameter (TD; cm). Factors of strain (STR), teasing (T), joining ratio (JR) and ram isolation (RI) were examined by analysis of variance.

**Table 1. Regression coefficients for source of reproductive loss and management factors**

NMNP, not mated, not pregnant; MNP, mated not pregnant; PF, partial failure of multiple ovulation;  
LLM, lamb loss to marking

Source of loss	Loss per 100 ewes	OR	LW	AGE	TJ	PS	FS	MP	WJP	TD
NMNP	2.67	-0.22	-0.17	0.61	-0.29	-0.01	0.01	-0.64	0.53*	-1.50
MNP	7.82	-1.35	-0.06	1.74	0.65	-0.01	0	-1.36*	0.14	-0.15
PF	13.06	32.14***	0.36	5.48*	1.71	-0.12	-0.01	0.56	-0.56	0.77
LLM	32.16	29.10**	0.41	4.76	1.89	0.05	0.02	-1.03	-0.27	-2.62
* $P < 0.05$ ; ** $P < 0.01$ , *** $P < 0.001$ .										

RI reduced NMNP (7.05 v. 1.88;  $P < 0.05$ ), while a longer WJP increased NMNP ( $P < 0.05$ ). A shorter MP increased MNP ( $P < 0.05$ ). Increased OR and AGE and reduced JR increased PF. A greater OR also increased LLM ( $P < 0.01$ ). No other relationships or comparisons were significant ( $P < 0.05$ ).

These results highlight the benefits of ram isolation prior to joining, extension of the mating period to 8 weeks, and a joining ratio of at least 1:50 for reducing sources of reproductive loss in commercial Merino flocks. Interestingly, time of joining, paddock size and flock size were not important. Further flocks will be studied to provide more reliable estimates of the relationships examined.

KLEEMANN, D. O., WALKER, S. K., GROSSER, T. I., GRIMSON, R. J. and SMITH, D. H. (1991). *Proc. Aust. Soc. Reprod. Biol.* 23: 58.