

# ATTEMPTS TO IMPROVE THE REPRODUCTIVE PERFORMANCE OF BORDER LEICESTER x MERINO EWE LAMBS JOINED IN THEIR FIRST SEASON.

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The efficiency of prime lamb production could be increased by effective mating of maiden ewes and ewe lambs but the reproductive performance of maidens is characterised by a later occurrence of first oestrus, a shorter breeding season, and a lower ovulation rate than that of mature ewes Wheeler & Land 1977). While melatonin implants have been shown to improve the reproductive performance of well grown maiden Merino ewes joined in Spring (Staples *et al* 1986) nothing is known of the effect of such treatment on immature Border Leicester x Merino (BLxM) ewe lambs. This study examined whether melatonin treatment of ewe lambs in Spring would improve their reproductive performance when they were mated in their first breeding season.

BLxM ewe lambs born in May 1986 were allocated on live weight to two groups. The treatment group received a s/c implant of melatonin (Regulin, Gene Link Aust Ltd) on 1st Dec. 1986, while control ewes were not treated. Groups were joined separately on 8th Jan. 1987 (Day 0) to 3% untreated fertile rams fitted with harnesses and crayons. Both groups were grazed on poor summer pasture and were unable to gain weight from a mean of 37kg over the 8 week mating period. Flocks were observed for mating marks and foetal numbers were determined by sonography.

Table 1: First oestrus, conception patterns & fecundity of 7 month old BLxM ewe lambs treated with melatonin prior to their first breeding season.

Group	n	Cumulative % mating & conceiving by day							Foetuses	
		Observation	11	20	28	42	49	56	/ewe preg	/100 ewes
Control	103	1st oestrus	4	13	25	47	53	83 <sup>a</sup>	1.15	22
		Conceiving	1	7	15	18	18	18		
Treated	94	1st oestrus	10	18	34	43	48	66 <sup>b</sup>	1.04	26
		Conceiving	4	10	19	24	24	24		

a#b, P<0.01. Chi square on quantitative contingency tables.

Although more of the untreated group showed oestrus by the end of joining, there were no significant differences between groups in fertility or fecundity. A peak of oestrus occurred during the latter part of the mating period for both groups, but none of the animals mating at this time conceived. Previous studies have shown that BLxM ewe lambs of the same pre-mating weight of the ewe lambs in this study, but which gained weight (10kg) over the mating period, produced 80% lambs (Earl unpublished data) so the low fertility in the trials may have resulted partly from the poor pasture conditions during the joining period. Melatonin treatments caused no improvement in the reproductive performance of immature ewe lambs grazing poor pasture during mating and may have slightly delayed puberty in these lambs.

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