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Use of high fleece weight Romney rams for out-of-season lambing

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INTRODUCTION

In many New Zealand studies on out-of-season lambing, rams of Poll Dorset or Dorset Horn breeds have been used to ensure adequate ram libido and fertility in spring matings. However, pen libido tests with Romney and Cheviot rams, have suggested that ram libido was unlikely to limit out-of-season breeding programmes (Shackell *et al.*, 1977). This was confirmed by comparison of effectiveness of Polled Dorset or Romney rams joined with ewes in November (Knight *et al.*, 1989).

The sheep used in this trial were from the autumn lambing Dorset x Romney flock described by McQueen and Reid (1988). It was characterised by relatively low wool production (Reid *et al.*, 1988). To overcome this limitation, Romney rams from a line selected for high fleece weight were mated to a proportion of the ewes. This paper reports on the effect of these High Fleece Weight Romney rams on reproductive performance.

EXPERIMENTAL

Mating management was similar to that used in previous years (Reid *et al.*, 1988). Initially all ewes which had lambed in autumn 1988 ($n = 168$), two toothths ($n = 99$) and 24 which had not lambed in 1988 were joined with all available rams ($n = 24$) from shearing (1 November) until tupping activity commenced (10 November). At that stage two groups were formed from the 108 ewes with highest wool production over the previous year. Each of these groups was joined with one of the two highest wool producing rams from the Kamo Dorset x Romney flock. The remaining 183 were joined with a group of six Romney rams from the High Fleece Weight selected line. On 14 November, after weaning the spring lambing ewes, 18, 12 and 78 of these were joined with the two single sire rams and the group mating respectively. This gave ram:ewe ratios of 1:70

(1.4%), 1:68 (1.5%) and 1:43 (2.3%) for each of the three groups respectively.

After approximately five weeks, the ram (a 5 year old) in one single sire group (Group 1) was replaced because he was observed to be inactive.

Mating was recorded for 8 weeks from 10 November to 4 January.

RESULTS AND DISCUSSION

The proportions of ewes marked in the first cycle were very similar for all three groups - two single sire groups and one group mated (Table 1).

TABLE 1 Proportions of ewes tupped in Cycle 1 and over all and those retupped in Cycle 2 for single sire and Romney group matings

Numbers		Cycle 1	All	Re-tups	
Group	Ram ¹ Rams Breed	Ewes	10.11.88	10.11.88	
			-		
			24.11.88	4.1.89	
SS1	D x R 1	70	0.257	0.686	0.22
SS2	D x R 1	68	0.215	0.789	0.39
RG	HFWR 6	261	0.265	0.765	0.39
			NS	NS	NS

¹Ram Breeds: D x R = Kamo Dorset x Romney autumn lambing strain (McQueen and Reid, 1988)
HFWR = High Fleece Weight Selected Romney

The numbers marked in one single sire group dropped markedly in Cycles 2 and 3 with that ram being replaced part way through the third cycle. Mating activity in that group then increased markedly so that by the end of the mating, there were no differences between the groups in the proportion marked. The proportions marked overall were low at 69-79%. These

TABLE 2 Proportion of tupped ewes lambing in each cycle, number of tups per ewe lambing, and mean lambing date.

Group	Proportion of tupped ewes lambing					Tups per ewe*	Mean lambing date
	Cycle 1	Cycle 2	Cycle 3	Cycle 4	Total		
SS1	0.53	0.73	0.50	1.00	0.85	1.17	3 May
SS2	0.57	0.72	0.50	0.33	0.77	1.35	26 April
RG	0.30	0.75	0.87	0.33	0.81	1.22	1 May
						NS	**

*Number of cycles in which ewes were recorded as being tupped.

proportions were, however, similar to those for ewes lambing in autumn of 1986 and 1987 (Reid *et al.*, 1988). All available ewes were joined for this mating, including 108 which had lambed in spring 1988. These were joined as they were weaned on 14 November 1988. Of these spring lambing ewes, 49% lambed the following autumn, compared with 83% of ewes which had lambed in autumn.

Of those tupped in Cycle 1, there was no difference between the groups in the proportion tupped again in Cycle 2, indicating that matings in Cycle 1 were similarly fertile for each of the three groups (Table 1).

Similar proportions of tupped ewes lambed in each group (77-85%). The numbers of cycles in which ewes which lambed were recorded as being tupped were similar in each group. Of those ewes tupped in Cycle 1, 53-57% lambed to that tupping in the single sire group, while only 30% lambed in the Romney group (Table 2).

Across all groups 72-75% of ewes tupped in Cycle 2 lambed to that tup. These differences were not significant. Because of the small numbers of ewes tupped in Cycles 3 and 4 the proportions lambing to those tups did not differ significantly for the three groups.

The mean lambing date was earlier for ewes in the second single sire group (25 April), than for those in the first single sire group (2 May), or for those group mated to Romney rams (30 April) (Table 2). However, these differences were small.

This data indicate that these Romney rams are capable of mating ewes in mid-November. There may

be a higher proportion of the matings in the first cycle which do not result in lamb, compared with the use of rams of proven out of season lambing ability. However, the effect of these differences is small, affecting mean lambing date by only five days. The use of a partially inactive autumn ram in this trial had a greater effect.

Thus, Romney rams of this selection line are satisfactory for use in autumn lambing systems. This conclusion is similar to those reached by Knight *et al.* (1989) and by Shackell *et al.* (1977).

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