

THE INFLUENCE OF VASECTOMIZED RAMS ON THE LAMBING PATTERN OF OF SPRING-MATED CORRIEDALE EWES

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According to Hunter (1959, 1962, 1964) the sexual activity of the ewe is at a low level during spring and early summer, a problem which confronts many farmers who breed their ewes at this time of the year. However, it is now well established that the practice of joining vasectomized rams with breeding ewes for 14 days prior to joining with fertile males, leads to an early onset of the breeding season, and a synchronization of the resultant lambing pattern (Lyle & Hunter, 1967). This practice is based on the finding that, at the onset of the breeding season, the first ovulation following a period of anoestrus occurs within eight days after the introduction of rams (Hunter & Lishman, 1967). However, overt oestrus is displayed only one cycle (17 days) later, since the initial (stimulated) ovulation is usually silent (Schinckel, 1954). Consequently oestrus can be expected 18 to 26 days after the introduction of rams.

Hunter (1964) suggested that approximately 30% of the spring-mated Merino ewes in the Natal Region commence sexual activity naturally during spring, whereas a further 50% are stimulated to ovulate by introduction of rams. According to Bosman (1966) the breeding season of the Corriedale is somewhat restricted. It appeared of interest therefore to examine, under practical farming conditions, the reproductive pattern of Corriedale ewes subjected to a ram stimulus prior to mating in spring. Results obtained by employing this practice at the Cedara Research Station, during four consecutive mating seasons (1970-1973), are reported in this communication.

On the 1st of November in each of the successive years in question, vasectomized rams (3%) were joined with a flock of approximately 200 Corriedale ewes. The flock was run on a self-sufficient farming unit on the Cedara Research Station. The age of the ewes at mating varied from 18 months to seven years during 1970 and 1971, and from 11 months to seven years during 1972 and 1973. On the 15th November the teaser rams were replaced by fertile males (4%) which remained with the breeding ewes for a period of four weeks. Lambing commenced on the 15th April each year, after which the daily incidence of lambing was recorded.

The pregnant ewes were maintained on paspalum (*Paspalum dilatatum*) and kikuyu (*Pennisetum clandestinum*) pasture throughout the gestation period. During the final six weeks of pregnancy each ewe received a daily supplement of 113 g of maize meal.

The lambing percentage (lambs born/ewes mated) over the four years averaged $101,0 \pm 3,4\%$. An average of $70,2 \pm 3,0\%$ of the mated ewes produced single, and $14,9 \pm 3,3\%$ twin lambs. Following joining with fertile rams, an average of $14,9 \pm 1,2\%$ of the ewes failed to lamb.

The number of ewes which lambed per day, for the duration of the 1971 lambing season, is illustrated in Fig. 1. Data pertaining to the daily incidence of lambing in the other three years is presented in Table 1.

The use of teaser rams in spring to stimulate sexual activity in the ewes resulted in an effective synchronization of the subsequent lambing pattern (Fig. 1). It is evident (Table 1) that, over the study period, an average of $83,4 \pm 3,7\%$ and $93,1 \pm 2,1\%$ of the ewes which lambed, did so during the first 14 and 21 days of the lambing season, respectively. The relatively smaller percentage of ewes which lambed within the first three weeks of the lambing season in 1973 and 1974 (Table 1) may have been due to the practice of mating a number of young ewes, aged 11 months, during these seasons.

Two peaks in the daily incidence of lambing were recorded. The first occurred between days one and six, and the second between days eight and fourteen of the lambing period (Fig. 1). The average length of the gestation period in Corriedale ewes varies from 148 to 150 days (Terrill, 1968). However, it appears that the observed peaks in the occurrence of lambing were associated with the expected peaks in the incidence of oestrus at 18 and 26 days after introduction of teaser rams during the mating season.

The lambing pattern of 120 ewes in the flock was examined in greater detail to establish whether the ewes consistently, that is, in four successive years, lambed early or late. It was evident that the same 87 ewes (72,5% of the animals studied) lambed before day 18 of the lambing season in the four consecutive years of this study. In the remaining ewes (27,5%) lambing occurred before day 18 of the lambing season in certain years, and after this date in others. Only five ewes (4,2%) lambed after day 21 of the lambing period in at least two of the years in question.

The results of this investigation show that twin births mainly occurred during the early part of the lambing season. Thus, of all the twin births recorded 70,1% occurred within the first 10 days of the lambing period. Furthermore, 19,8% of the ewes which produced twin lambs, did so in more than one year.

The minimum number of Corriedale ewes which ovulated, and subsequently lambed ($86,1 + 0,71\%$) was somewhat higher than the theoretical percentage (80%) of Merino ewes which ovulate following ram stimulation in spring (Hunter, 1964). However, it is possible that a larger percentage of the Corriedale ewes ovulated following ram stimulation, but did not exhibit overt oestrus, did not conceive, or aborted during the gestation period.

The results of this study highlight the advantage to be gained by using teaser rams to stimulate sexual activity, and to synchronize the lambing pattern of spring-mated Corriedale ewes. Furthermore, it appears that a fairly large number of ewes (72,5%) which conceive at the first oestrous period following joining with fertile rams in spring, do so consistently over a number of years. How-

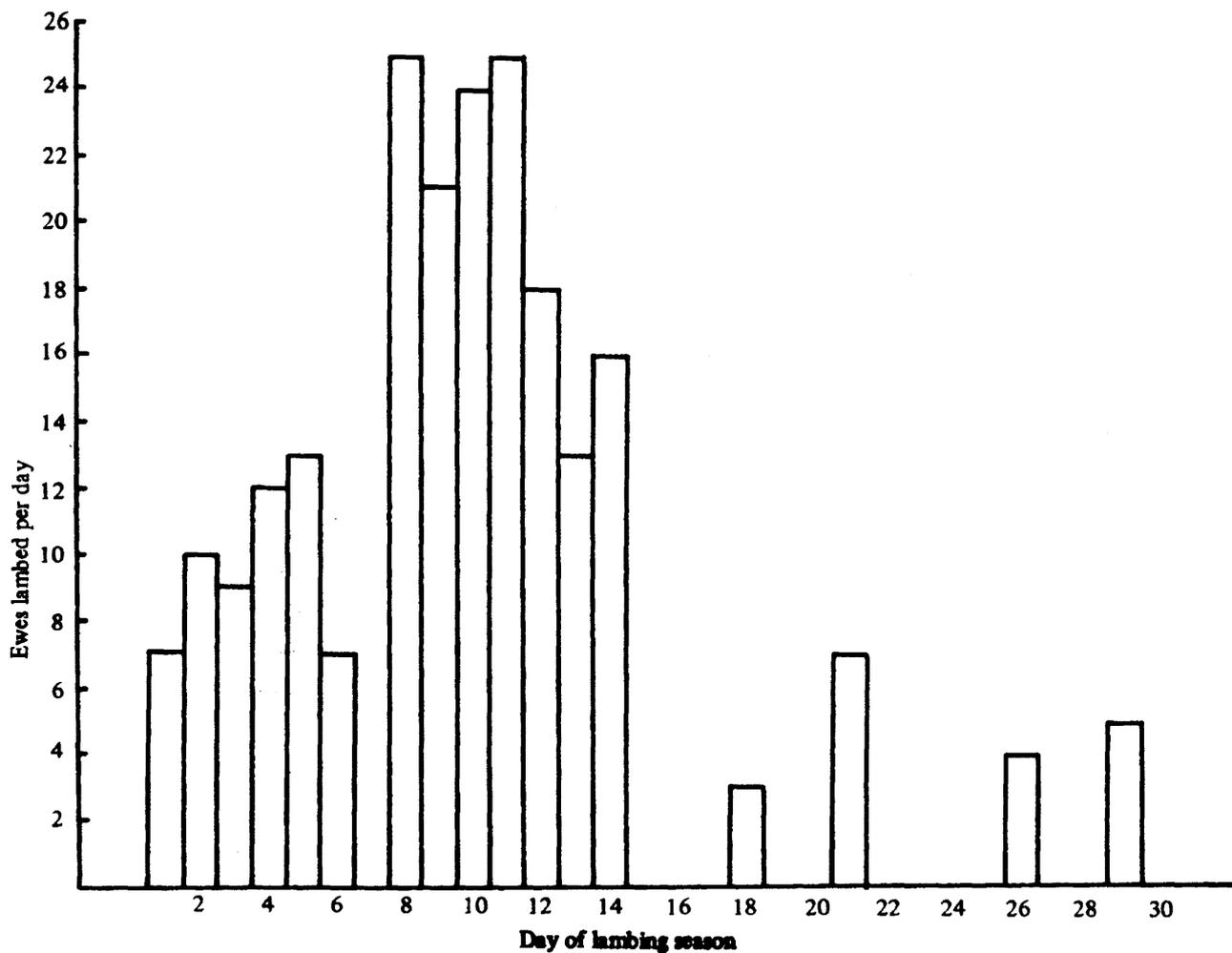


Fig. 1 The lambing pattern of spring-mated Corriedale ewes during 1971

Table 1

The incidence of lambing in spring-mated Corriedale ewes

Year of Lambing	% Pregnant ewes which lambled:		
	During the first 14 days of the lambing season	During the first 21 days of the lambing season	After the 21st day of the lambing season
1971	91,7	95,8	4,2
1972	83,6	97,4	2,6
1973	84,6	90,7	9,3
1974	73,8	88,5	11,5
Mean:	83,4 ± 3,7	93,1 ± 2,1	6,9 ± 2,1

ever, the extent to which this phenomenon occurs will probably depend on the inherent level of fertility in the flock.

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