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THE EFFECT OF SHEARING EWES DURING THE MATING PERIOD ON THE SUBSEQUENT LAMBING PATTERN

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SUMMARY

Four hundred and thirty-nine Coopworth ewes had oestrus synchronized by progestagen-impregnated intravaginal sponges. Mating commenced at the second oestrus after sponge withdrawal. Approximately 10 days after mating, half the sheep were shorn. The percentage of ewes lambing in 15-day periods was 43, 44, 7 and 5 for unshorn and 31, 3, 19 and 47 for shorn 3- to 9-year-old ewes, and 38, 41, 15 and 6 for unshorn and 30, 0, 23 and 38 for shorn 2-year-old ewes.

INTRODUCTION

Shearing is one of the most stressful events that can happen to sheep (Kilgour and deLangen, 1970). It involves forcing them into strange situations, handling, and isolation from other sheep, as well as stresses associated with wool removal and consequent readjustments of metabolism.

Doney *et al.* (1976a, b) have shown that the stress of handling ewes in normal husbandry operations or the injection of ACTH will reduce ovulation rates and increase embryonic loss. Shearing during or soon after the mating season is widely practised throughout New Zealand and particularly in the northern half of the North Island, and the effect of this stress on reproductive performance has not been considered. This paper describes an experiment designed to test the effect of shearing during the mating period on the subsequent pattern of lambing.

MATERIALS AND METHODS

Four hundred and thirty-nine 2- to 9-year-old Coopworth ewes were used in the experiment. On February 14, 1977, intravaginal sponges impregnated with 60 mg MAPS were inserted into the ewe for 11 days. The ewes were allocated to mating groups of 40 to 80. Rams were introduced singly into the mating groups

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§ Medroxyprogesterone acetate (Upjohn).

on March 14 so that mating started at the second oestrus after sponge treatment.

Three groups of ewes were shorn on March 25, approximately 10 days after the expected time of first mating. Apart from shearing, all sheep were left as undisturbed as possible during the mating period. The rams were removed from the ewes on May 8 and the control sheep were shorn May 20-23.

The sheep were intensively shepherded during lambing and the date of lambing and the number of lambs born were recorded for each ewe.

Statistical analysis was by fitting models using the GLIM statistical package (N.A.G., 1978) and using the variation between rams within shearing treatments as the experimental error when necessary.

RESULTS

Figure 1 indicates that there was a dramatic effect on the pattern of lambing. Shearing reduced the number of ewes lambing in the first two cycles of lambing and there was a pronounced

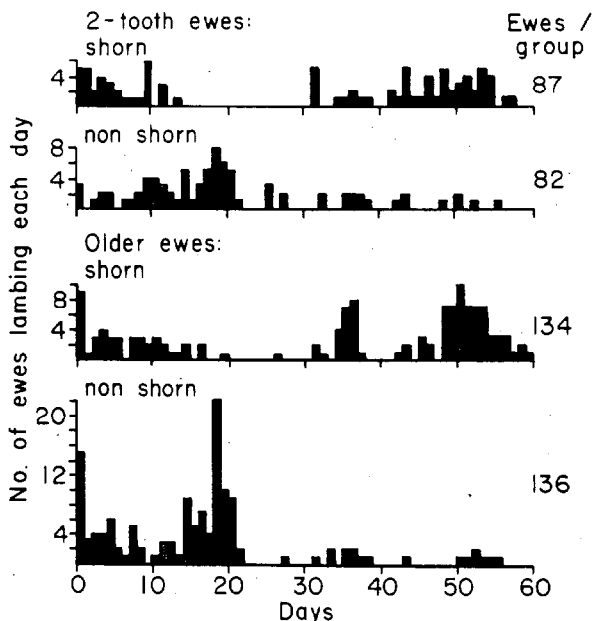


FIG. 1: Number of ewes lambing each day during the 60-day lambing period.

increase in the percentage of shorn ewes lambing in the third and fourth cycles ($P < 0.001$). While there is a suggestion that this effect was more pronounced in two-tooths than in older ewes, the interaction of shearing with age was not significant.

There is no indication of a change of lambing percentages from one lambing cycle to the other, but shearing may have decreased the percentage of multiple births for the two-year-olds ($\chi^2 = 3.0$, $df = 1$, $P < 0.1$).

Table 1 shows that the percentage of non-pregnant sheep is higher in the control than in the shorn. ($\chi^2 = 3.5$, $df = 1$, $P < 0.1$).

TABLE 1: FECUNDITY AND BARRENNESS IN SHORN AND CONTROL EWES

| | 2-year-old-ewes | | 3- to 9-year-old ewes | |
|--------------------|-----------------|---------|-----------------------|---------|
| | Shorn | Control | Shorn | Control |
| LB/EL ¹ | 1.36 | 1.50 | 1.68 | 1.68 |
| Barren (%) | 6.9 | 15.9 | 8.2 | 12.5 |

¹ Lambs born per ewe lambing.

DISCUSSION

Shearing has caused a delay of lambing in this experiment. The higher number of non-pregnant sheep in the control sheep may have been due to embryo loss caused by shearing of these sheep, which took place soon after the rams were removed.

Second shearing commonly takes place in March, April and May during mating and early pregnancy, and if the response in this trial is more general, lamb production on many farms may be affected. Further experimental evidence of the nature of these effects is required.

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