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Mating performance of Texel rams

G.H. DAVIS, T.W. KNIGHT¹, E. SORENSON¹, G.H. SHACKELL,
M.R. HOLMES AND P.A. FARQUHAR

MAF Technology, Invermay Agricultural Centre, Mosgiel

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INTRODUCTION

The reproductive performance of four Texel rams at the Invermay secondary quarantine station in 1988 and anecdotal evidence from overseas suggested that Texel rams may not be capable of successfully mating large numbers of ewes.

MATERIALS AND METHODS

Experiment 1

On 29 March 1989 four harnessed two tooth Texel rams were each joined with 50 Romney ewes and three harnessed two tooth Texel rams each joined with 100 ewes for 35 days at the MAF Technology Flock House secondary quarantine station. All ewes were four tooth or older. Crayon colours were changed at 9 day intervals and mating marks were recorded at each crayon change and at the end of joining. The joining weights of the ewes averaged 54.8 kg.

Experiment 2

Semen samples were collected from five Texel rams and two Romney rams on 3 April 1989 at MAF Technology's Invermay secondary quarantine station. These rams were then joined with 33-45 ewes and a further semen sample collected on 9 May.

RESULTS AND DISCUSSION

Experiment 1

At ram/ewe ratios of 1:50 and 1:100 the ewes marked in cycle 1 (first 18 days) were respectively 93.4% and

88.6%, ewes mating in the first cycle and not returning to service were 76.9% and 76.0%, ewes pregnant to cycle 1 were 75.3% and 66.0%, and ewes lambing to both cycles were 86.1% and 87.2%.

None of the differences between ram/ewe ratios was significant. The percentage of ewes marked in cycle one supports the observation at the Invermay secondary quarantine area in 1988 that the libido of the Texel rams was satisfactory.

There was a significant difference in returns to service during the first 9 days of joining (26.4%) and the second 9 days of joining (14.0%, $P < 0.01$) but this was not affected by ram/ewe ratio. Returns to service in other flocks of Romney sheep at Flock House ranged from 15-20% which suggests that during the second half of the first cycle the conception rates of the Texels were similar to Romneys in that environment. Conception rates generally were possibly affected by an outbreak of facial eczema experienced at Flock House during the autumn.

The apparent difference between ram/ewe ratios in ewes pregnant to cycle one was due to the low performance of one out of the three rams joined at 1:100 (40% pregnant to cycle 1).

Experiment 2

Total motile sperm from the five Texel rams declined from 6016×10^6 ($\pm 1300 \times 10^6$) at the start of joining to 586×10^6 ($\pm 83 \times 10^6$) at the end of joining with 33-45 ewes. Two Romney rams each joined with 100 ewes showed a decline from 7657×10^6 to 2471×10^6 motile sperm. The sperm counts of two of the Texel rams after joining (47×10^6 and 65×10^6 motile sperm) were considered marginal for fertility but the percentage of ewes holding to service from these two rams (79% and

¹ MAF Technology, Flock House Agricultural Centre, Bulls

90%) were not significantly different from any of the other three Texel rams (73%, 79% and 96%).

Because the Texel sheep were confined to secondary quarantine areas there were very few rams available for this study. As the performance of rams within a breed can vary widely the results of this experiment should be interpreted with caution, and further work with more rams and a wider range of ram/ewe ratios is required to fully evaluate the mating performance of Texels.

CONCLUSION

This experiment has shown that after two cycles of joining 86-87% of ewes were pregnant and this was not affected by the ram/ewe ratio (1:50 versus 1:100). Reduced conception rates during the first 8 days of joining could adversely affect reproductive performance where Texel rams are joined at a synchronised oestrus.