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COMPARATIVE PERFORMANCE OF MULE EWES BRED AT 6 OR 18 MONTHS OF AGE

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INTRODUCTION

On many traditional sheep production systems ewe lambs are not mated at 6 months of age but are overwintered and mated for the first time at 18 months of age. Mating ewe lambs has the potential advantages of faster return on capital invested and greater lifetime performance provided that subsequent performance is not compromised by early mating. In the present trial the performance, in terms of maternal growth and lamb production, of Mule ewes bred for the first time at 6 or 18 months of age is compared over a 4-year period.

MATERIAL AND METHODS

Mule ewe lambs (Bluefaced Leicester × Blackface or Swaledale) were purchased at the September sales in 1985, 1986 and 1987. Intakes for each of these years were 96, 103 and 100 ewe lambs respectively. Lambs were vaccinated on arrival against ovine enzootic abortion and clostridia and were subsequently grazed on silage aftermaths or newly sown grass leys. Fertility tested Suffolk rams were introduced during October and November of each year at a mating ratio of one ram to 10 ewe lambs. Ewe lambs were allowed one return to service only. Pregnancy diagnosis by ultrasonic scanning was conducted about 80 days post ram introduction and ewe lambs conceiving (C) were subsequently inwintered on a diet of precision-chopped clamp silage or hay and chopped swedes with a barley/fish meal supplement. Those failing to conceive (NC) were outwintered on grass with hay available under adverse weather conditions. They were not rebred until the following year. Additional ewe lambs purchased in 1987 were similarly outwintered and were bred for the first time the following year (G). In the following year, the majority of ewe lambs were bred or rebred at 18 months of age. However, a proportion joined an earlier lambing flock and were bred or rebred at 15 months of age. Data for these two groups are considered separately in the results. Statistical analysis of data was by standard *t* test.

RESULTS

Mean live weights at mating for animals conceiving or failing to conceive as ewe lambs were 42·0 and 41·2 kg respectively, this difference being non-significant. Over the three purchase years conception rate ranged from 69 to 86% with a mean of 78%. Mean number of live lambs born per ewe put to the ram was 1·02. Data for individual purchase years is summarized in Table 1 and data for animals bred or rebred at 18 to 15 months old are summarized in Tables 2 and 3 respectively.

TABLE 1
Live weight and lambing data for ewe lambs put to the ram at 6 months of age

	1985	1986	1987
No. ewe lambs			
To the ram	96	103	100
Conceiving (C)	81	89	70
Not conceiving (NC)	15	14	30
Mean live weight (kg ± s.e.) at mating			
C	40·7 (±0·5)	41·7 (±0·3)	44·0 (±0·5)
NC	38·5 (±1·4)	40·1 (±1·0)	43·0 (±0·9)
Lambs born alive per 100 ewes to ram	113	110	79

TABLE 2

Live weight and lambing data for animals bred at 18 months of age after conceiving (C), failing to conceive (NC) or being overwintered (G) as ewe lambs (3 years' figures)

No. of ewes	C	NC	G
To the ram	203	28	36
Conceiving	188	19	34
% conceiving	93	68	94
Mean live weight (kg ± s.e. at mating	63·0 (±0·4)	64·0 (±1·0)	64·0 (±1·0)
Lambs born alive per 100 ewes to ram	163	150	160

TABLE 3

Live weight and lambing data for animals bred at 15 months of age after conceiving (C), failing to conceive (NC) or being overwintered (G) as ewe lambs (3 years' figures)

No. of ewes	C	NC	G
To the ram	21	50	27
Conceiving	17	28	14
% conceiving	81	56	52
Mean live weight (kg ± s.e. at mating	55·0 (±1·6)	57·0 (±0·9)	55·0 (±0·3)
Lambs born alive per 100 ewes to ram	130	107	86

DISCUSSION

From these results it would appear that factors other than live weight influence the ability of Mule ewe lambs to conceive at 6 months of age. Interestingly, the heaviest ewe lambs (1987 purchase) had the poorest conception and lambing rates. Pregnancy and lactation did not apparently affect growth as indicated by similar live weights at 15 and 18 months old for ewe lambs which conceived, failed to conceive or were overwintered. However, it must be remembered that ewe lambs conceiving at 6 months of age were given a considerable improvement in nutrition during late pregnancy and early lactation, without which maternal growth retardation may have been apparent.

With regard to conception rates at either 15 or 18 months of age, animals which had been bred at 6 months of age demonstrated improved performance over those failing to conceive in each case. Ewe lambs bred at 6 months of age also had higher conception rates than overwintered ewe lambs when bred at 15, but not at 18 months, of age. These findings suggest that behaviour and degree of sexual maturity may influence the occurrence of mating both as ewe lambs and at the subsequent mating, bred ewe lambs possibly being more mature and more precocious than those which failed to breed for managerial or other reasons. This implies that sexual maturity and precocity may be only indirectly related to live weight once a threshold live weight has been attained. The data demonstrated no adverse effects of early pregnancy and lactation on a subsequent pregnancy even when rebreeding was at 15 months of age.

For each ewe lamb class, overall conception and lambing rates were improved when breeding or rebreeding was at 18, compared with 15, months of age. This effect may be attributable to seasonality, ewe lambs bred or rebred at 15 and 18 months of age being at the beginning of or in the mid breeding season, respectively.

CONCLUSIONS

1. Factors other than live weight may determine the ability of Mule ewe lambs to breed at 6 months of age.
2. Mating of Mule ewe lambs at 6 months of age should not impair future performance provided they are adequately grown at mating and suitably fed during pregancy and early lactation.