PERFORMANCE OF PUREBRED AND CROSSBRED EWES FOR PRIME LAMB PRODUCTION

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INTRODUCTION

Corriedales are a long established, synthetic dual-purpose breed of sheep. They are generally considered to be well adapted to the wet environmental conditions of south western Victoria. In 1983, this region contained 2.7 million Corriedale sheep (32% of the Australian Corriedale flock) (Australian Bureau of Statistics 1984).

The results presented in this report are a preliminary analysis of an experiment which was carried out to determine the extent to which crossbreeding based on Corriedale dams could improve prime lamb production in this region.

METHODS

The experimental ewe flocks were bred on the Pastoral Research Institute. Corriedale, Romney and Border Leicester rams purchased from local studs were mated with a Corriedale ewe flock. The resulting ewe progeny were mated to Poll Dorset rams for a late winter/early spring lambing in 1983, 1984 and 1985. These Poll Dorset sired lambs were slaughtered as prime lambs when batches reached a mean unfasted liveweight of 38 kg. The major determinant of carcass quality was the hot tissue depth measurement made at the GR position (110 mm from midline over the 12th rib). In 1983, a total of 168 ewes lambed and half the lambs were slaughtered as suckers and half were weaned and slaughtered later as carryovers. In 1984 229 ewes lambed and all lambs were weaned, shorn and refattened before slaughter. In 1985, 68 ewes lambed and the lambs were all slaughtered as suckers.

RESULTS

The results are summarised in terms of the main effects of breed of ewe pooled over the 3 years in Table 1.

Reproductive performance was significantly ($P<0.05$) influenced by breed of ewe; the Border Leicester cross ewes showed the highest prolificacy while both crossbred ewe types had better lamb survival rates than straightbred Corriedales.

Slaughter age was also influenced by breed of ewe with Border Leicester ewes consistently performing the best (1983 suckers $P<0.01$, 1983 carry-overs $P>0.05$, 1984 $P<0.01$ and 1985 $P<0.01$).

TABLE 1. The Effect of Breed of Ewe on Prime Lamb Production

	Corriedale	Romney×Corriedale	Border×Corriedale
Prolificacy* (%)	21	28	49
Lamb mortality (%)	21	12	10
Slaughter age (days)	189	187	178
GR (mm)	9	10	9
Dressing %	47	47	48

* Percentage of ewes bearing multiples/ewes lambing.

Over the 3 years the mean slaughter age of twins born to Border Leicester ewes was only 11 days (6%) greater than the mean slaughter age of singles born to straightbred ewes.

Breed of ewe had quite small effects on the carcass quality parameters recorded, particularly in comparison with the larger effects due to year, litter size or sex of lamb.

DISCUSSION

Crossbreeding and levels of heterozygosity are among the main points considered in the discussion of breed utilization for commercial meat production systems (e.g. Netter 1978, Ch'ang and Aitkin 1982, Terrill 1982). Over-emphasis on these aspects will lead to a reduced consideration of combining ability of the breeds. Other practical limitations to the system, such as the costs and risks associated with purchasing first cross ewes on a regular basis must be considered.

The results reported here emphasise the important role of Border Leicester genes in a dam line aimed at prime lamb production. In this experiment Border Leicester cross ewes produced 46% more weight of lamb per ewe while Romney cross ewes only 24% more than the straightbred Corriedale ewes. The Border Leicester breed seems to have a very high level of general combining ability in this dam line role as the present report confirms previous results (with Corriedale crosses {Coop 1957}, with Merino crosses {McGuirk 1967} and with Romney crosses {Hight and Jury 1970, 1971}). The encouraging levels of productivity retained in some synthetic lines based on Border Leicester crosses should also encourage further development of such synthetic breeds (e.g. Corriedale crosses - Gromark/Borderdale {Godlee 1979}, Merino crosses {Atkins 1980}, Romney crosses (Coopworth) {Coop 1978} and A.B.R.O. dam line {Smith 1982}.

A complete evaluation of prime lamb dams suitable for south western Victoria will require further information on ewe liveweight, fleece production and adaptability to the environment. Further analysis of this experiment is proceeding.

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