# EARLY WEANING OF CROSSBRED LAMBS

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## SUMMARY

The effects of weaning single and twin crossbred lambs at 55 or 66 days of age on growth rate, fat deposition and ewe live weight were investigated where there was a higher than normal stocking rate and lambing percentage. There *were* no detrimental effects of weaning early on final weight, average daily gain or fat, early weaning may be a useful management strategy, enabling producers to wean lambs at an early age and place them on the most favourable pastures.

## INTRODUCTION

Australian Meat and Livestock Research and Development funded projects will supply the Australian prime lamb industry with Border Leicesters homozygous for the high fecundity Booroola gene by 1993. These Border Leicesters will sire crossbred ewes which achieve lambing percentages in excess of 200%. One problem associated with such high lambing percentages is achieving satisfactory growth in lambs born as multiples. Under normal management twin and triplet reared lambs grow at 84% and 72% of the growth of a single lamb respectively, (Dunstan and Earl unpublished). Studies by Mc Hugh and Cannon 1959, Killeen 1960 and Wardrop *et al.* 1960 have shown no advantages from weaning at stocking rates where feed availability is adequate. Investigations into the effects of weaning single lambs from crossbred ewes indicate weaning is likely to be of benefit when the stocking pressure is high (Cannon and Bath 1967). This finding is supported by similar studies in Corriedale and Merino ewes (Furnival and Corbett 1976).

Little is known about the effects of early weaning lambs on ewe and lamb production in flocks which have high lambing percentages. Producers who use prolific crossbreds will necessarily be exerting higher stocking pressure on their pastures if they do not reduce stocking rates. Under these conditions weaning may well be a useful management option.

In the current experiment the effects of weaning at 51 or 66 days of age on growth rate and fat deposition of weaning at 51 or 66 days were investigated in both twin and single bearing maiden ewes stocked at what is considered to be a high stocking rate for the district (7.5 ewes/ha) and at lambing percentages which may be expected from maiden Booroola crossbred ewes.

## MATERIALS AND METHODS

### *Location and environment*

The experiment was conducted in the south east of South Australia on the Kybybolite Research Station (latitude 36 53'S longitude 140 55'E) which has a Mediterranean environment typified by periods of winter rainfall and summer drought. The average rainfall is 550 mm effective for 8.1 months during the period April to November. The pastures were comprised of Wimmera ryegrass (*Lolium rigidum*), subterranean clover (*Trifolium subterraneum* cv Mt. Barker), barley grass (*Hordeum spp*) and capeweed *(Arctotheca calendula*).

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### *Animals*

The ewes used in the experiment were chosen from a group of 490, one and a half. year old Border Leicester Merinos which had been treated with a combination of Regulin (Regulin Pty. Ltd.) and Fecundin *(Coopers* Animal Health) prior to mating to Dorset rams (3%).

### *Experimental design*

The three treatments applied in this experiment were weaning at an average age of 51 days, 66 days- or an unweaned group. Each treatment was replicated three times. The plots in the first, second and third replications contained 27, 50 and 44 ewes respectively and each plot had approximately 38% twin and 62%' single bearing ewes stocked at a rate of 7.5 ewes/ha. The average day of birth for all lambs was 14/6/88.

Weaning was accomplished by constructing fences across plots so that ewes received one third of the available area and the lambs two thirds.

The 1988 season at Kybybolite was characterised by an early break (March) resulting in excellent availability of pasture prior to lambing and up until both times of weaning.

Results were analysed using a generalised linear model approach (S.A.S. Institute Inc. 1988 Release 6.03).

## RESULTS

The least squares means for lamb production characters are presented in Table 1 for both singles and twins, In both these groups the dressing percentage of the control lambs was significantly higher ($P < 0.01$) than for the two weaned groups. No other differences were significant. The mean ewe live weights during the trial showed no effect of weaning treatment (Table 2). Males had higher average daily gains, and singles had higher average daily gains; final weights, carcase weights, dressing percentage and GR than twins.

Table 1 Final weight, fat depth (G.R. site), dressing percentage carcase weight and average daily gain (ADG) from birth to sale for single and twin lambs unweaned, or weaned at 51 or 66 days of age

| | Final weight (kg) | Fat G.R. (mm) | Dressing percentages | Carcase weight | ADG (kg/day) |
|---|---|---|---|---|---|
| **Singles** | | | | | |
| Control | 36.4 ± .63 | 12.3 ± .49 | 47 ± 0.4** | 17.7 ± .29 | 0.25 ± .004 |
| Wean 51 days | 35.0 ± .62 | 9.6 ± .95 | 44 ± 0.4 | 16.1 ± .30 | 0.24 ± .004 |
| Wean 66 days | 36.0 ± .64 | 9.6 ± .49 | 44 ± 0.4 | 16.4 ± .28 | 0.25 ± .004 |
| **Twins** | | | | | |
| Control | 31.3 ± .59 | 10.6 ± .61 | 45 ± 0.5** | 15.3 ± .36 | 0.21 ± .004 |
| Wean 51 days | 31.3 ± .58 | 7.9 ± .60 | 42 ± 0.5 | 14.5 ± .36 | 0.21 ± .004 |
| Wean 66 days | 31.5 ± .58 | 8.43 ± .52 | 43 ± 0.4 | 14.6 ± .31 | 0.21 ± .004 |

Mean values with their standard deviations

** Controls significantly different from the weaned treatments ($P < 0.01$)

Table 2 Ewe live weights during the trial

| Date: | 12/8 | 29/8 | 22/9 | 20/10 |
|---|---|---|---|---|
| Control | 56 | 55 | 60 | 60 |
| Wean 51 days | 54 | 55 | 56 | 60 |
| Wean 66 days | 54 | 57 | 56 | 60 |

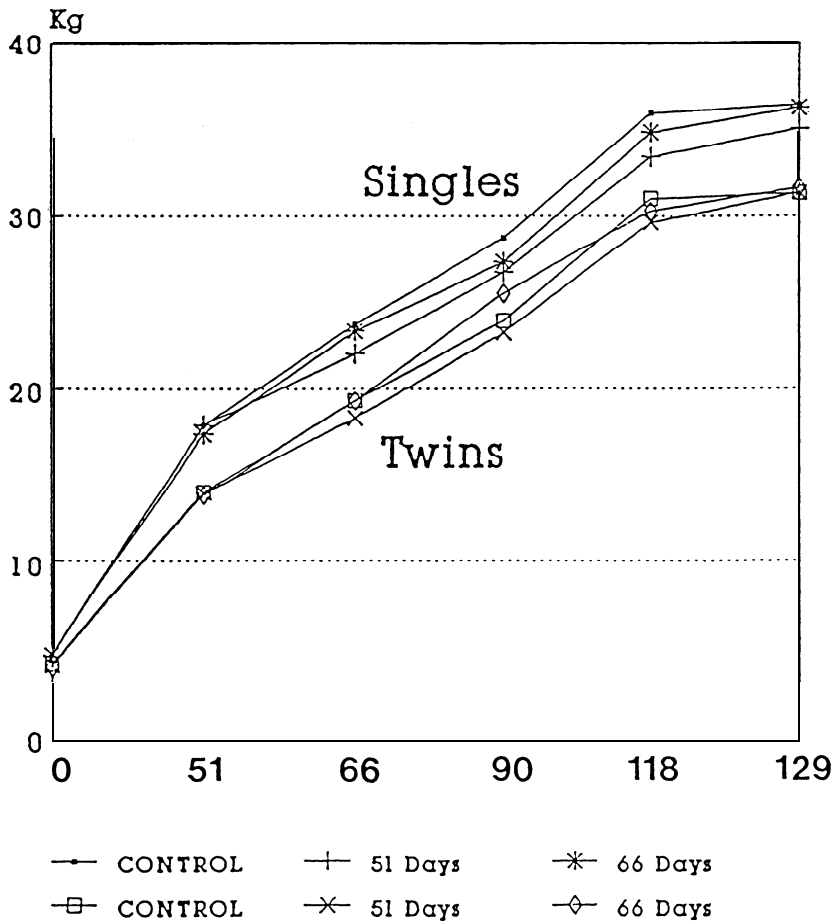


Fig. 1. Mean live weight of lambs reared as singles or twins after weaning at 51 days (12/8), 66 days (29/8) or left unweaned

## DISCUSSION

In the current study no significant differences in fat (G.R.), carcase weight, final weight, or growth rate were observed for lambs weaned at 51 days, 66 days or lambs which *were* not weaned, nor were there any differences in ewe live weights over the course of the experiment. These results were similar for both twin and single reared lambs. The results indicate that in the environment described, weaning of crossbred lambs as early as 51 days of age has little effect on liveweight gain of both ewe or lamb.

Figure 1 shows the increase of live weights of singles and twins, of the three weaning treatments. The differences between singles and twins seem to have only slightly increased after the weighing on 12/8, most of the differences having occurred by this time. Thus if there is anything to be done to improve twin growth rate it needs to be done in the first two months after a lamb is born.

The ratios used in subdividing plots in which weaning occurred were based on the tables of the nutrient requirements of grazing animals. Under the conditions of this experiment this resulted in the pasture in the plots containing weaned lambs becoming taller and possibly less digestible than control plots whereas the pasture areas of the dry ewes had less available pasture than control plots. A more suitable division would have been to divide the plots equally between ewes and lambs which may have resulted in better weight gains in the weaned groups.

While no advantage has been shown here for early weaning of lambs the fact that there is also no disadvantage makes it a useful management option to meet particular on-farm situations. One such option is where there is a limited amount *of* high quality pasture. In this case lambs could be weaned early and run as one management group. By doing this all lambs could be given access to the areas of highest quality pasture on the farm.

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