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EARLY WEANING OF LAMBS : EFFECT OF VARIOUS PREWEANING FACTORS ON PELLETED FEED INTAKE AFTER 21 DAYS

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Extensive information on the requirements of preruminant lambs for protein and energy has been acquired during the past 15 years. Less is known of those factors which are of importance in determining when a lamb can be weaned off milk on to solid feed without suffering a marked check in growth. The relative importance of such factors as birth and weaning weight, sex, age of weaning, method of feeding and energy gain preweaning, are not clearly defined (Bakker 1968; Owen 1969; Treacher 1973) and are the subject of experiments now in progress. Walker and Hunt (1978) have observed with lambs that there is a close relationship between energy gain from birth to 21 days and days of survival after weaning. Lambs weighing <2.2 kg at birth did not survive if weaned at 21 days, irrespective of their energy gain preweaning. Lambs weighing >2.2 kg at birth survived for at least 15 days after weaning without eating, if their energy gain had been >23 MJ (0.46 MJ/day per kg $^{0-73}$).

In the present experiment twenty-four crossbred lambs, 12 males and 12 females (within each sex, 6 weighing <2.7 kg, 6 weighing >3.4 kg) were taken from the ewe at birth, were given cows' colostrum for 24h, then fed on cows' reconstituted dried whole milk to appetite until they had gained 23 MJ or were 21 days of age. The experimental design was a 2 x 2 x 2 factorial (sex x birth weight x age of weaning). All lambs were fed on cows' milk to provide 0.46 MJ/day per kg$^{0.73}$ (energy maintenance) when they had gained 23 MJ. At 21 days twelve lambs were abruptly weaned off milk, the other twelve continued on milk for maintenance to 42 days. A commercial calf pellet (18% crude protein) was available to each lamb from 10 days of age. Feed intake and liveweight were recorded daily. Some mean performance values are given in Table 1.

TABLE 1. Performance of lambs weaned at 21 or 42 days.

Weaning age (days)	No. of lambs	Liveweight (kg) Birth	Liveweight (kg) 21days	Energy gain to 21d (MJ)	Pellet intake 21-42d (g/day per kg$^{0.73}$)
21	6	2.2	5.8	25.4	23*
	6	4.2	7.6	26.5	32
42	6	2.2	6.0	26.9	14
	6	4.0	7.3	27.0	15

*Three lambs died of starvation.

The preliminary results showed: (1) Light birthweight lambs (<2.3 kg) cannot safely be weaned off milk at 21 days - some will fail to eat and will die; (2) Heavy birthweight lambs (>4.0 kg) weaned at 21 days will lose weight at weaning, will survive, but will not regain their weaning weight for 9 ± 5 days; (3) Light and heavy birthweight lambs will continue to gain weight after 21 days if fed on milk for maintenance, but their intake of pellets will not increase as rapidly as that of lambs weaned at 21 days; (4) There was no effect of sex on pellet intake to 42 days.

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