

Early weaning of twin-reared lambs at eight weeks of age onto lucerne

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In New Zealand, lambs are conventionally weaned between 10 and 14 weeks of age onto grass/clover pastures at average live weights less than 30 kg (Cranston *et al.* 2017). Ewe milk production peaks in the first two weeks of lactation and reduces markedly post week eight (Peterson *et al.* 2006). Consequently, in later lactation the lamb receives little nutrition from milk and the ewe and lamb(s) can become herbage competitors, especially when herbage availability is restricted. Lucerne (*Medicago sativa*) is a high quality forage which is commonly used for finishing lambs or grazing ewes and lambs during lactation. Recent research has shown twin lambs weaned early (minimum of 16kg, 7-8 weeks of age) onto mixed swards of chicory (*Cichorium intybus*), plantain (*Plantago lanceolata*), red clover (*Trifolium pratense*) and white clover can reach similar or slightly lighter weights (1.5-2.5kg) at approximately 90 days of age compared to unweaned lambs on grass (Corner-Thomas *et al.* 2019; Ekanayake *et al.* 2020). These studies suggest that weaning twin-born lambs early at approximately eight weeks of age onto lucerne could be a viable management option. The aim of this study was to investigate the effect of weaning twin-lambs early (8 weeks of age) onto lucerne on the live weight of the lambs and their dams.

On 1 November 2016 (50 days after the midpoint of lambing; L50), 75 twin-rearing ewes whose individual lambs weighed a minimum of 16 kg were allocated to one of three treatments. The treatments were 1) unweaned ewe and lambs together on perennial ryegrass/white clover pasture (Unweaned Grass), 2) unweaned ewes and lambs together on lucerne (Unweaned Lucerne), 3) lambs weaned early onto lucerne and ewes on grass (Early weaned). Lambs and ewes in the Lucerne and Early weaned treatments were gradually adjusted to the lucerne diet and then ewes in the Early weaned treatment were removed at L65. Ewes and lambs were weighed at L50 and at L93 (time of conventional weaning). Herbage masses were maintained to allow for *ab libitum* grazing (>1200 kgDM/ha in the grass sward and >1500 kgDM/ha in the lucerne sward). Data was analysed using a mixed model in SAS with treatment included as a fixed effect and allowed for repeated measures.

There was no difference ($P > 0.05$) in the initial live weight of lambs allocated to the three treatments (Table 1). Early weaned lambs grew slower ($P < 0.05$) than unweaned grass lambs, which in turn, grew slower ($P < 0.05$) than unweaned lucerne lambs. At conventional weaning age (L93), early weaned lambs were lighter ($P < 0.05$) than unweaned lucerne lambs and unweaned grass lambs, which did not differ ($P > 0.05$) from one another. There was no difference ($P > 0.05$) in the initial live weight of ewes allocated to the three treatments. However, at L93, ewes which were weaned early and grazed grass were heavier ($P < 0.05$) than unweaned ewes which grazed either grass or lucerne.

These findings indicate under unrestricted herbage conditions early weaning is not a tool farmers would utilise to improve lamb live weight, although it does have advantages for the dam. However, the live weight achieved at a conventional weaning age in these early weaned lambs was equivalent to that reported by industry for conventionally weaned lambs. Further research is required to examine early weaning in comparison to restricted pasture conditions, a situation that can occur on many New Zealand farms under dry early summer conditions.

Table 1. Effect of treatment; ewes and lambs together on grass (Unweaned Grass), ewes and lambs together on lucerne (Unweaned Lucerne), lambs early weaned onto lucerne and ewes moved onto grass (Early weaned) on the live weight (mean \pm SEM) of twin-reared lambs and ewes at day 50 of lactation (L50), L93 and the liveweight gain (mean \pm SEM) of lambs between L65 (time of ewe removal) and L93.

Treatment	<i>n</i> lambs	Lamb liveweight (kg) at		Lamb liveweight gain (g/day)	Ewe liveweight (kg) at	
		L50 (start)	L93 (end)	L65 (ewe removal)-L93	L50	L93
Unweaned Grass	50	20.4 \pm 0.45	31.9b \pm 0.45	261b \pm 12.4	76.5 \pm 1.85	80.7a \pm 1.62
Unweaned Lucerne	50	19.9 \pm 0.48	32.4b \pm 0.48	303c \pm 12.5	76.9 \pm 1.95	80.8a \pm 1.50
Early weaned	50	19.5 \pm 0.45	29.8a \pm 0.46	223a \pm 12.7	76.1 \pm 1.86	84.8b \pm 1.52

Means within columns with different letters are significantly different ($P < 0.05$).

References

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