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Optimal sward height for production in twin and triplet ewes

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Key words : lamb growth, lamb birth weight, nutrition

Introduction Low birthweight lambs are associated with lower survival rates and lower weaning weights thereby limiting potential returns to sheep farmers. The nutritional requirements for both singleton- and twin-bearing ewes are well established and Morris et al. (2004) identified 4 cm as the optimal sward height for single- and twin-bearing/rearing ewes under continuous grazing systems. However, the feeding requirements of triplet bearing/rearing ewes under pastoral grazing conditions have only recently been researched in New Zealand.

Materials and methods In study one, 96 twin- and 90 triplet-bearing Romney ewes were randomly assigned on day 64 of pregnancy (P64) to four replicated sward height treatments (2, 4, 6 and 8 cm sward height). At parturition (L1) the ewes were reassigned to two (4 cm and 8 cm) replicated sward heights until weaning at L87. In study two, 80 twin- and 56 triplet-bearing ewes were randomly assigned to two replicated sward heights (2 and 4 cm) from P70 to P107. At P107 the ewes were re-randomised to the two swards heights until parturition generating four sward height treatments (2-2, 2-4, 4-2 and 4-4 cm). After parturition ewes were offered 4 cm pastures.

Results Study one ewes grazing the 2 cm sward height during pregnancy were significantly ($P < 0.01$) lighter at P99 and P132 and at L1 than ewes grazing 4, 6 or 8 cm swards. These ewes also had significantly lower dry matter intakes, condition scores and ultrasonic backfat depths (data not shown). Lambs born to ewes grazing the 2 cm swards during pregnancy were also lightest at birth ($P < 0.01$) but sward height during pregnancy or lactation had no effect on lamb weaning weight or lamb survival to weaning. In study two lambs born to ewes grazing 2 cm during pregnancy were lighter at birth and weaning than ewes grazing 4 cm swards during pregnancy (Table 1). Switching feeding level from 2 cm to 4 cm sward height at P107 resulted in lamb birth and weaning weights similar to those lambs born to ewes grazing 4 cm swards throughout pregnancy. Sward height had no effect on ewe maternal behaviour score. Lambs born to ewes grazing 2 cm swards throughout pregnancy exhibited behaviours associated with a greater drive to maintain contact with their dam than lambs born to well-fed ewes during the same period in both mid and late pregnancy. These types of behaviour have previously been associated with lower lamb survival rates.

Table 1 Effect of lamb birth rank and sward height offered to ewes during pregnancy on lamb birth and weaning weight (kg) (\pm SE). Differing superscripts are significantly different ($P < 0.05$).

	Birth weight	Weaning weight
Twin	4.5b \pm 0.1	25.2b \pm 0.3
Triplet	3.8a \pm 0.1	21.7a \pm 0.1
Sward height		
2-2	3.9a \pm 0.1	22.2a \pm 0.5
2-4	4.2ab \pm 0.1	23.5ab \pm 0.5
4-2	4.0a \pm 0.1	23.4ab \pm 0.5
4-4	4.4b \pm 0.1	24.7b \pm 0.5

Conclusions These results achieved on lowland predominately ryegrass/white clover swards suggest that ewes rearing twins and triplets should be grazed on pastures of 4 cm or better during pregnancy to achieve optimal birth weights, however there is no nutritional benefit in feeding above 4 cm in terms of lamb live weight. If feed is limiting ewes can be fed on 2 cm swards for the first two thirds of pregnancy provided 4 cm swards are available in last third of pregnancy.

References

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