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) (± SE) . Differing superscripts are significantly different ($P<0.05$) .*

	Birth weight	Weaning weight
Twin	4 .5b ±0 .1	25 .2b ±0 .3
Triplet	3 .8a ±0 .1	21 .7a ±0 .1
Sward height		
2—2	3 .9a ±0 .1	22 .2a ±0 .5
2—4	4 .2ab ±0 .1	23 .5ab ±0 .5
4—2	4 .0a ±0 .1	23 .4ab ±0 .5
4—4	4 .4b ±0 .1	24 .7b ±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 .

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