

Ewe body condition: Does farmer practice meet research guidelines?

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Introduction

A group of sheep farmers in the Southland region of New Zealand were surveyed in the winter of 2011 to determine their current winter management practices and ewe performance. This followed a 3 year Sustainable Farming Fund project to investigate if there was a relationship between maintaining an even ewe body condition score (BCS) during pregnancy and the incidence of vaginal prolapse (bearings). The program included a series of workshops to help farmers improve their ewe winter management and it became apparent that the actual winter feeding practice and ewe performance was relatively unknown.

The research was done to document current farmer winter feeding and management practices and subsequent whole flock reproductive performance.

Methods

Farmers from local discussion groups run by farm advisers were invited to participate in a follow-up survey of winter farm management practice and ewe performance. The management and performance records of 23 flocks were documented approximately 4 weeks before the start of lambing (mid to late August 2011), when the ewes were yarded for clostridial vaccinations. The process involved a farmer practice questionnaire and a physical assessment of mixed age ewe body condition score. The farmer practice questionnaire included questions about the demographics of the farm, feed planning, flock performance and the use of monitoring. The body condition scoring was done by a single trained technician using a random selection of 50 ewes in each mob. The average size of the ewe flock assessed was 2300 mixed aged ewes (ranging from 500 to 5950). There was a wide range of breeds represented, with the predominant base of the flocks being either Romney (65%) or Coopworth (33%). Other breeds that had been incorporated included Texel, Finn, and East Friesian.

Results

Nearly 53,000 mixed age ewes were included by the survey, representing 1.7% of the ewes in the region. The data in Table 1 indicates that of the 23 farmers surveyed only 35% weighed ewes in autumn, fewer (26%) could provide a current ewe live weight and even less (9%) body

Table 1. Summary of the questionnaire responses of 23 farmers in Southland, New Zealand on general winter management practices

General winter management	Response (%)	
	Yes	No
Do you weigh ewes in autumn?	35	65
Do you body condition score?	9	91
Do you feed budget?	56	44
Do you winter shear?	25	75
Is a supplementary feed used?	16	84
Do you use a winter crop?	83	17
Do you have a light ewe mob?	50	50
1 and 2 day shifting?	64	36

condition scored their ewes at all. Formal feed budgeting was used by 56% of these farmers. However, most used simple measurement techniques such as visual assessment (46%) or a sward stick (31%) rather than a calibrated device such as a plate meter (23%). The majority of farmers (84%) used winter crops such as swedes (*Brassica napus*) while forage supplements, such as hay and baleage, were used by only 16% of the farmers. The winter crops were most often grazed over a period of 4 weeks, usually in July or August, most often post-scanning, though occasionally this was extended to 6 weeks, depending of the yield of the crop and severity of the winter. Winter management of the ewes varied with half the farmers separating out lighter ewes (Table 1). Farmers were still using 1 or 2 day shifting policies during winter (64%) although a number (36%) had changed to longer grazing intervals of 3 to 4 days.

The average body condition score of individual flocks ranged from 1.95 to 2.67. When all of the individual records are represented the body condition score data shows that while the mode was 2.5 (49% of the ewes) the scores were not normally distributed, being biased towards a greater number of ewes with BCS below 2.5, and an overall mean score of 2.36.

The collection of data from pregnancy scanning was high with 78% of farmers collecting this data (Table 2). Nearly all (95%) used the data to remove dry ewes, while 58% used the information to differentially manage multiple-bearing ewes. While 65% of farmers scanned to identify triplet-bearing ewes, only 12% of those farmers

Table 2. The use of pregnancy scanning data by 23 farmers in Southland, New Zealand.

Decision	Response (%)	
	Yes	No
Use of pregnancy scanning	78	22
Do you pregnancy scan?	78	22
If you pregnancy scanned then-		
Do you remove dry ewes?	95	5
Do you separate multiple bearing ewes from the flock?	58	42
Do you scan for triplets?	65	35
Do you split triplet bearing ewes from the flock?	12	88

separated those ewes for differential management.

An analysis of the overall reproductive performance of the flocks surveyed indicates that the body condition score recorded just prior to lambing in 2011 has a relationship ($P=0.080$) with the long term average lambing percentage achieved by these flocks. An increase in 1 BCS unit prior to lambing was equal to an increase in long term lambing percentage of approximately 18%.

Discussion

This study provides a unique data set combining farmer practice and actual measured data (ewe BCS) as it relates to ewe performance and winter management practices. Research indicates that that a BCS of 3 during pregnancy provides the optimum outcome for ewe survival (Morgan-Davies *et al.* 2008) lamb survival (Everett-Hincks *et al.* 2004) and lamb liveweight gain to weaning (Stevens *et al.* 2011). Many of the management decisions the farmers make, such as removing light ewes from the main mob or managing multiples and single bearing ewes differently, are made to help manage flock performance but farmers often do not collect the supporting physical data such as ewe live weight and BCS. Instead, farmers use their own senses and past experience (*e.g.* eye assessment of pasture and ewe condition) to manage stock. For example, when allocating feed on a daily basis during winter, farmers who did not do a formal feed budget assessed pasture by eye, though did not provide a specific dry matter allocation target. While this provides rapid management tools for day to day

decisions, the below optimal BCS recorded in late winter suggests that this approach reinforces past experience rather than providing new insight and improved outcomes. Farmers were most likely to overestimate ewe live weight and body condition as well as not considering the range of values within their flock and the importance this has on overall performance such as lambing percentage, lamb growth rate and weaning weight. Use of data by farmer groups has been shown to increase performance over time (Cocks *et al.* 2002) with the farmers making progress more rapidly in the later stages of the learning process as they become familiar with the link between the scientific theory and the practical on farm management practices that have to be implemented.

Conclusion

The data collected from 23 flocks in Southland New Zealand provided an insight to the potential for farmers to increase on-farm productivity through the simple approach of coupling formal body condition scoring of ewes on a regular basis with improved feed budgeting and feed allocation to maintain ewes at a condition score 3. The relationship between late winter BCS and long-term lambing percentage provides farmers with a demonstration that the science-recommended optimal BCS of 3 does have a productivity outcome.

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