

Lifetime Wool – Dry feed budgeting tool

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ABSTRACT

Draft guidelines from the *Lifetime Wool* Project, which describe the optimum nutritional management of ewes, are based on ewes being managed to condition score targets through pregnancy and lactation (1, 2). To achieve these targets for ewes grazing dry pasture or stubbles, graziers will need to calculate adjustments to the rates of supplementary feed supplied. Feed budget programmes do exist but depend on inputs for the amount and quality of feed on offer. Obtaining these inputs is time-consuming and expensive, and will not necessarily be a good indication of animal performance due to the selectivity of grazing animals. A new feed budgeting tool has been developed which uses the change in animal condition score over a defined period, and known supplementary feeding rates, to estimate the quality and daily feed intake from a dry pasture/stubble feed-base. The tool then estimates the feeding rate required to match a target change in condition score for the next period, allowing for predicted declines in the quantity and quality of dry feed.

METHOD

The basis of the 'Let the Sheep Talk' (LST) spreadsheet is to use the ewes' change in condition score (CS) or live weight (LW) over a known period to determine adjustments to supplementary feeding rates for the next short-term period. That is, LST employs a 'Looking Back - Looking Forward' approach.

Background inputs (sheep genotype, nutritional quality of supplements to be used, reproductive calendar and strategic animal performance targets) for an individual farm are entered. The average CS or LW from 25 randomly selected animals is then entered and compared to the targets in a graphical representation of 'actual' versus 'target' CS (Figure 1). The graph illustrates the annual strategic CS profile, plots the average 'actual' CS from the monitored ewes, and presents the new short-term target CS for the next period.

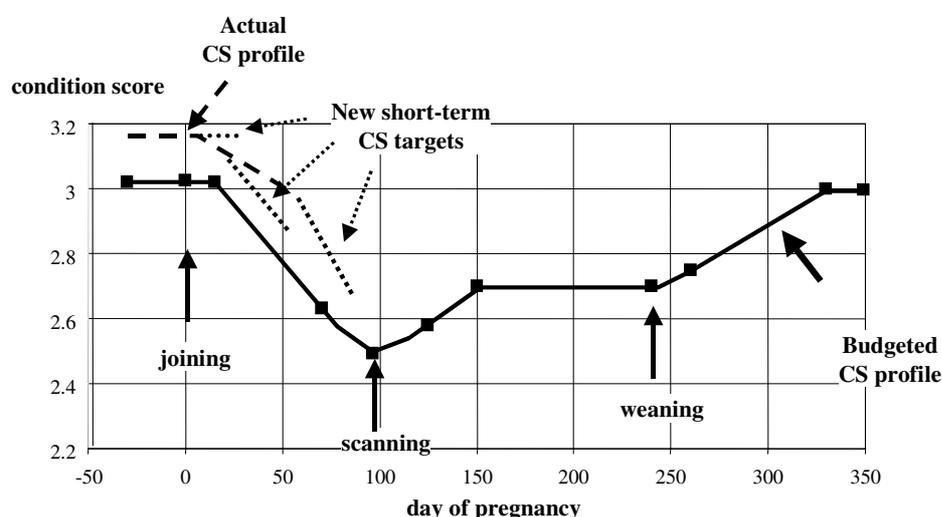


Figure 1. Graphical representation of actual (solid line) and budgeted condition score (CS) profile (dashed line) for single bearing ewes in the "Let the Sheep Talk" feed budget tool. Dotted lines represent short-term target CS..

The tool uses calculations from GrazFeed[®] to estimate the daily metabolisable energy (ME) intake required that would result in the measured change in CS or LW. The spreadsheet assumes all supplementary feed is eaten and then calculates the residual ME that must have been ingested from the pasture/stubble. From this the quality of the pasture or stubble is estimated. Feed intake in the following period is then estimated making allowance for changes in quantity and quality of the dry feed base and substitution with supplement (Table 1).

The new target CS is calculated and constrained at a maximum loss of 100 g/h/d (a level which will not cause undue stress to the maternal ewe). The feed budget then calculates the rate of supplementary feeding necessary to meet the new target.

Table 1. Components of the 'Let the Sheep Talk' spreadsheet where changes in CS ('Looking Back') and allowances for declining pasture quality and quantity ('Looking Forward') are used to predict supplementary feeding rates to achieve a target CS.

	Looking Back	Looking Forward
	Oats:Lupins	Oats:Lupins
Initial CS or LW		
Date	28/2/05	27/3/05
CS	3.2	3.0
Final CS or LW		
Date	27/3/05	21/5/05
CS	3.0	2.78
Supplement fed ('Looking back') or supplement required ('Looking forward') (g/h/d)	259	187
Rate of supplement required if no paddock feed available (g/h/d)	596	
Pasture Quality/Quantity		
Digestibility (%)	53	48
FOO (t DM/ha)	1.5	1.2
Proportion of legume (%)	40	35

CONCLUSION

Short-term changes in CS or LW of an animal directly reflect its ME intake from pasture/stubble residues and supplementary feed. Estimating the ME derived from dry feed residues allows adjustments to supplementary feeding rates to meet production targets for pregnant ewes. Thus, regular monitoring of ewes could become a useful method of managing animals grazing dry feed residues and allows feed budgeting without the necessity to assess the amount and quality of dry feed residues.

For regular animal monitoring to be used practically on farms, accurate time-efficient procedures for monitoring CS and/or LW will be required. Operators will need to be calibrated for CS, and automatic electronic eartag weighing systems will need to be corrected for conceptus growth.

KEY WORDS

Feed budgeting, Lifetime Wool

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