

Body Condition Score

SIL Technical Note

Subject: **Adult Body Condition Score (BCS)**
 Relates to: Body condition score, ultrasound scanning, ewe weight, health traits
 Date: Updated November 2016 (version 1 with rBVs - September 2015)

Summary

- Higher body condition score ewes are more resilient to adverse conditions.
- A body condition score breeding value (BCSeBV) and sub-index (DPBC) are available in SIL.
- Body condition score is considered a Health trait and reporting is restricted to breeders recording the trait.
- Body condition scoring all two-tooth and older ewes at least once per year is recommended (options: Mating, Scanning, Lambing or Weaning).
- BCS at mating is the preferred measurement time. It is important to record mob codes if different mobs have been fed differently prior to measurement.
- A liveweight should be recorded whenever BCS is recorded (i.e. at Mating, Scanning, Lambing or Weaning).
- Information from ultra sound muscle and fat scanning is informative for young animals and is used in conjunction with BCS recording to improve the accuracy of BCS genetic merit prediction in young animals prior to recording adult BCS.

Background

Adult ewe metabolic size is a combination of liveweight and bone, muscle and fat distribution. SIL currently has a breeding value for Adult Size with a negative weighting reflecting increased feed costs or reduced stocking rates associated with larger ewes. Liveweight alone does not explain all aspects of a ewe's metabolic feed requirements, muscle requires maintenance but fat has a lower maintenance requirement. A higher body condition makes ewes more resilient in adverse conditions. Body condition score in conjunction with information on adult size is more informative than either alone..

Recording BCS for genetic evaluation

BCS is measured by feeling the muscle and fat cover behind last rib and scoring against a standard BCS guide. Detailed information on body condition scoring and its value for management purposes is available from the Beef + Lamb New Zealand website.

Condition scores range from 1 to 5, with 1 being a ewe in very poor condition and 5 being a ewe in exceptionally good condition. BCS can be measured in half scores (e.g. 2.5) when a ewe falls between two BCS categories. BCS can be recorded in SIL at any of four key times, namely mating, scanning, lambing or weaning. The genetic correlations between BCS measured at the four times are very high (79 to 95%). This means that an animal with a high, or a low, BCS at one time is expected to have a high, or a low, BCS at all recording times. It also means for genetic evaluation purposes, that breeders only need to record BCS once a year in their flocks. SIL recommends condition scoring all two-tooth and older ewes

once a year and, as the breeding value is expressed as BCS at mating, mating is the preferred time if possible.

Record the ewe ID, BCS, live weight, recording date and any relevant management mob information. It is important to record mob codes if different mobs have been fed differently in the period prior to measurement, e.g. light ewes fed preferentially prior to mating. If recording mob is problematic, consider recording BCS at a time of the year where mob effects are less likely to have created systematic differences among animals. Ideally one person should do all BCS measurements at one time, if more than one person scores a separate mob code should be used to account for variation in scoring between operators.

Body Condition Score is partially associated with ewe live weight, and helps provide a more complete description of ewe size and condition. SIL therefore recommends that breeders record a live weight at the same time as a BCS record.

Genetic evaluation

BCS is moderately heritable (16 to 20%) and highly repeatable (79-95%) meaning ewes that rank above or below average at one time are expected to rank similarly at another time.

The analysis adjusts for a number of effects likely to influence BCS, including the number of lambs weaned in the current and/or previous year (depending on the measurement time). Ultrasonic eye muscle measurements (eye muscle depth, eye muscle width and depth of fat over the eye muscle) are also included as predictors, as they are moderately correlated with BCS and are measured quite early in an animal's life. These measurements are useful in that they have some predictive ability over a year before ewes are measured for BCS.

SIL uses the performance of relatives in genetic evaluations. This means that genetic merit for BCS can be assessed in sheep that have not been measured themselves, such as for rams even though only ewes are measured for BCS.

The BCS index weighting is based on energy and feed costs of gaining a unit of BCS minus energy and feed costs released by a unit of BCS. The final economic value is defined by the difference in cost associated with ewes that have a 1 BCS difference at mating.

Reporting BCS breeding values and sub-index

BCS can be reported as a sub-index Dual Purpose Body Condition Score (DPBC) or as a breeding value (BCSeBV). Body condition is classed as a registered health trait and reporting is restricted to breeders recording the trait.

BCS is not included in the New Zealand Standard Maternal Worth Index (NZMW), which includes Reproduction, Survival, Lamb Growth, Adult Size and Wool, but it can be added as Maternal Worth + Body Condition or used in customised indexes for registered breeders.

References

Ewe Body Condition Scoring (BCS) Handbook May 2013.

www.beeflambnz.com/Documents/Farm/Ewe%20body%20condition%20scoring%20handbook.pdf

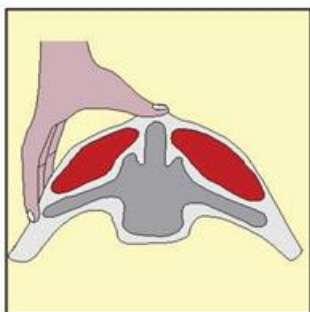
Ewe body condition scoring: an introduction www.youtube.com/watch?v=cYca3aKx4Go

Need more information?

Contact your SIL bureau, or call 0800-745-435 (0800-SIL-HELP).

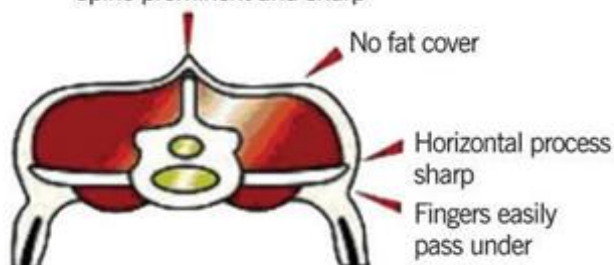
How to Body Condition Score Ewes

Locate the last rib (13th). Place your thumb on the top of the spine and fingers located on the ends of the horizontal process (short ribs) directly behind the last rib.



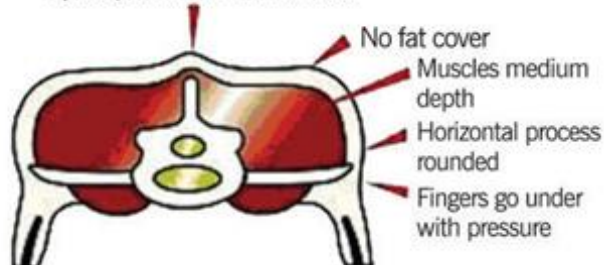
Body condition score 1

Spine prominent and sharp



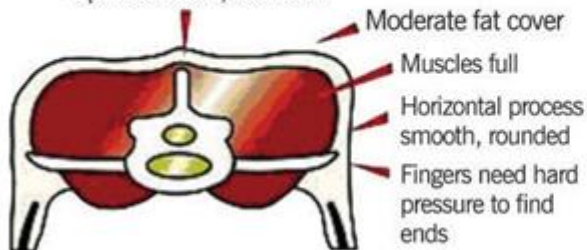
Body condition score 2

Spine prominent and smooth



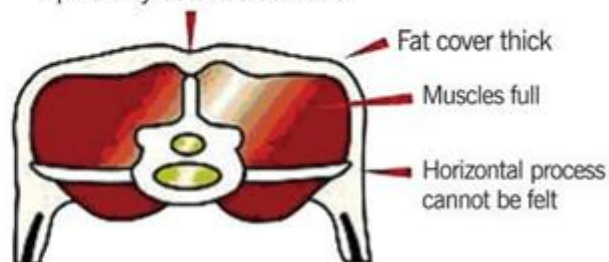
Body condition score 3

Spine smooth, rounded



Body condition score 4

Spine only detected as a line



Body condition score 5

Spine not detectable, fat dimpled over spine

