No. 8

PLANNED CARCASE PRODUCTION

SHEEP MANAGEMENT MATTERS

A series on Sheep Management Topics from the Meat and Livestock Commission

MLC

An even flow of quality lamb onto the market throughout the year is a key MLC objective. This technical booklet is the eighth in a series on sheep management and production systems which sets out the management standards and targets which have to be achieved if these systems are to be profitable.

The selection of slaughter lambs to meet market requirements is a key element of any production system and therefore "Planned Carcase Production" is an essential reference for all sheep producers.

Editor

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Jenny Anderson is the MLC's sheep scientist. Jenny started work as a shepherd and has an extensive knowledge of practical sheep production and husbandry, as well as scientific knowledge. She has an ANCA in sheep production from Kirkley Hall, a BSc from Edinburgh University, a MSc from the University of Wales and undertook her PhD on "An evaluation of entire males for lamb production" at the University of Newcastle. After completing her PhD Jenny worked for SAC as a Research Scientist working on the Booroola gene in sheep.

Planning to meet the market

Producers need to plan their production system to meet the growing demands of consumers for lean lamb. The diversity of the British sheep industry with its large number of breeds and crosses produced under widely different climatic conditions gives tremendous opportunity realised through careful selection of finished lambs.

Consumers prefer lean lamb.

Market Requirements

Specifications are defined primarily in terms of carcase weight and fatness. A common factor of all carcase specifications is the low level of fatness desired. Fat trimmed by retailers is wasteful. All available evidence suggests that fat left on retail cuts will be discarded as plate waste – a potential threat to consumer acceptability.

Meat traders also require lambs which are well fleshed throughout the carcase and therefore of good conformation.

Two main factors help to meet specifications:

- Selection of terminal sires with good conformation and the ability to produce lean carcases at the required weight.
- Skilled lamb selection at the correct level of fatness for slaughter.

Table 1: Market requirements for British lamb

Carcase weight (kg)	Market
Under 12	Italy, Spain, Portugal, Greece
12-16	Britain, Italy, Spain
16-20	Britain, France, Belgium, Switzerland
Over 20	Britain, Germany, Belgium, Switzerland

Specified Risk Material

Specified Risk Material (SRM) controls introduced on 1 January 1998 mean the carcases from lambs over 12 months of age are sold without spinal cord. Lambs are examined in the slaughterhouse to assess their age and those with an erupted incisor are classified as over 12 months of age. Producers are therefore advised to check the mouths of lambs regularly from late autumn as part of their selection process.

Temporary incisors

Both of the above qualify for application of Young Lamb stamp.

One permanent incisor erupted

Spinal cord must be removed from sheep and goats in which there is at least one permanent incisor erupted.

(photos courtesy of Meat Hygiene Service)

Carcase Classification

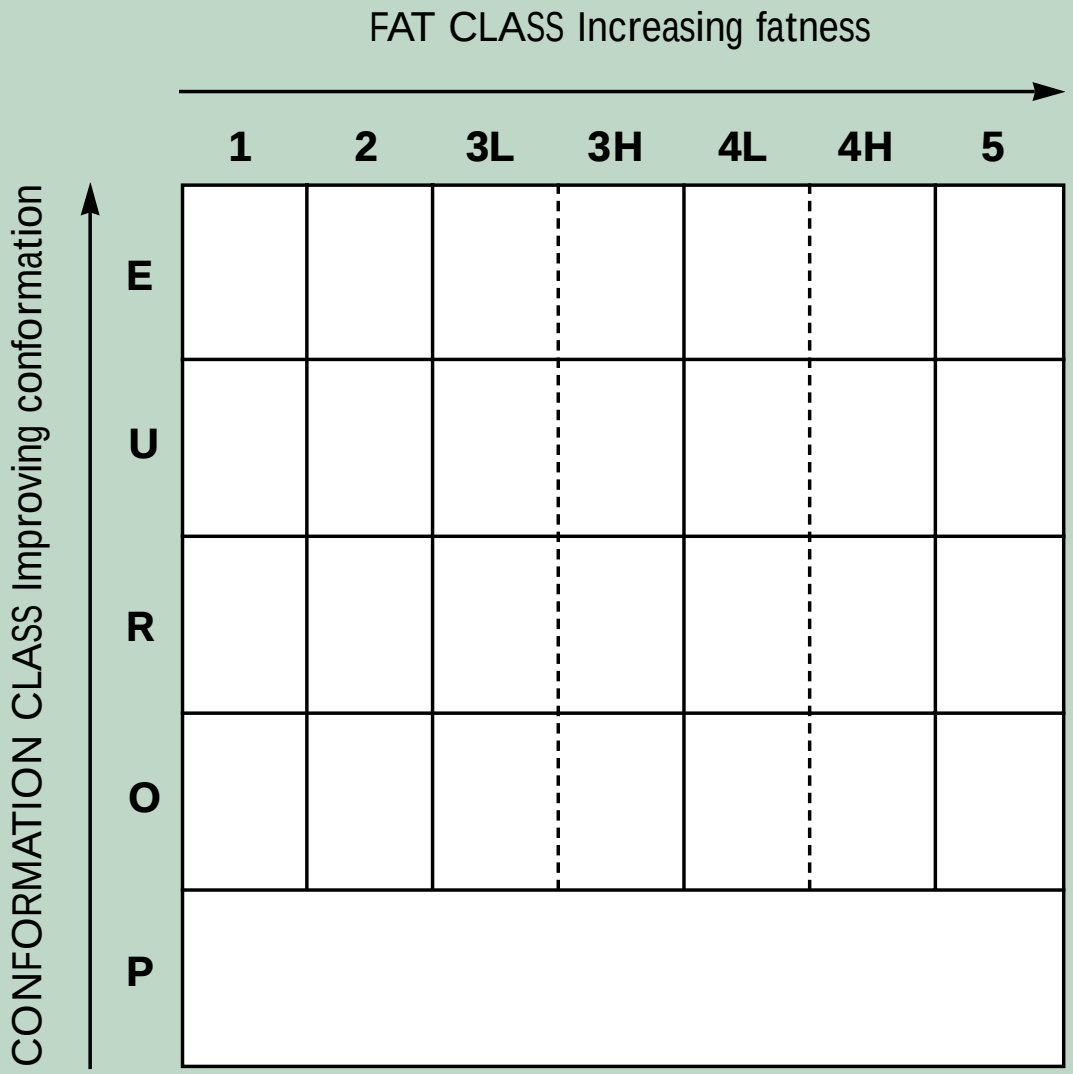
MLC's Sheep Carcase Classification Scheme is an ideal tool to communicate clear descriptions of carcase specifications in the marketing chain.

The scheme describes carcases by:

- Weight – Cold dressed carcase weight
- The dressing specification used
- Category New Season Lamb (NSL)
  Old Season Lamb (OSL)
  Mature Sheep (MS)
- Conformation
- Fatness

A sound basis for:

- Common language for specifications
- Pricing
- Monitoring


FAT CLASS Increasing fatness
1
2
3L
3H
4L
4H
5
CONFORMATION CLASS Improving conformation
E
U
R
O
P

Conformation

The conformation class is determined by a visual appraisal of shape, taking into account carcase blockiness and fullness of the legs. No adjustment is made for the influence of fatness on overall shape.

There are five main classes: E, U, R, O, P.

E

U

Fatness

The fat class is determined by a visual appraisal of external fat development. There are five main classes ranging from 1 (very lean) to 5 (very fat). Classes 3 and 4 are sub-divided into L (leaner) and H (fatter).

Refer to page 11 for cross sectional detail of these fat classes.

1

2

3L

R

O

P

3H

4L

4H

5

Assessing fatness

Handling live lambs to assess fatness is an acquired skill which can be gained by regular practice. There are two important handling points on the live lamb which provide reliable guides to the fat class of its carcase: the tail root or dock, and the loin.

In addition to these two handling points, assessment of fat cover over the last three ribs, just off the eye muscle, can further contribute to the accurate assessment of fatness as defined by the MLC Sheep Carcase Classification grid.

Handling in this way provides a reliable assessment of fatness provided wool thickness is allowed for, but excessive pressure can lead to bruising. This leads to devaluation of the carcase, so careful handling is important.

Perfecting these lamb selection skills can be profitable. Live handling, followed by a visit to examine the carcases in the abattoir, is a good way to gain experience and perfect the technique. Regular use of carcase classification provides a sound basis for monitoring selection decisions.

Key skills

- ❑ Setting target weights for slaughter
- ❑ Handling lambs to assess fatness

Dock

Handle the tail root to feel the fat covering the individual bones of the tail. As lambs become fatter, it is more difficult to detect individual bones.

Loin

Place the hand over the spinous and transverse processes (vertebrae or spine) at the loin to assess their prominence: the less prominent, the fatter the lamb.

Handling lambs to assess fatness

Loin	Fat class		Dock
Very easy to feel between processes which are very prominent	1		Individual bones very easy to detect
Prominent spinous and transverse processes felt easily	2		Individual bones easy to detect with light pressure
Tips of processes rounded. Individual bones felt as corrugations with light pressure	3L		Light pressure to detect individual bones
Spinous processes felt with moderate pressure. Transverse with firm pressure	4L		Firm pressure to detect individual bones
Individual processes cannot be detected	5		Individual bones cannot be detected

Setting target weights for slaughter

Liveweight of growing lambs is a reasonable guide to fatness, but variation in liveweight of adult sheep is great because of breed, farm, management and environment conditions. Breed liveweights – the average of the mature ram and ewe weights have been found to be more reliable for prediction of fatness.

As a general guide lambs that have grown well without check will produce carcases in fat class 3 when slaughtered at half their potential adult breed liveweight (mid-way between the breed weight of its parents).

Breed liveweights (kg)

Terminal sire breeds	
❑ Charollais	86
❑ Meatlinc	87
❑ Hampshire Down	78
❑ Vendeen	90
❑ Oxford Down	100
❑ Southdown	61
❑ Suffolk	91
❑ Texel	87
Longwools	
❑ Bluefaced Leicester	96
❑ Border Leicester	94
❑ Devon and Cornwall Longwool	95
❑ Lincoln Longwool	91
❑ Romney Marsh	77
❑ Teeswater	96
Shortwools	
❑ Clun Forest	73
❑ Devon Closewool	66
❑ Dorset	82
Hillbreeds	
❑ Cheviot	64
❑ North Country Cheviot	82
❑ Scottish Blackface	70
❑ Swaledale	64
❑ Welsh Mountain	50
Crossbreeds	
❑ Greyface	82
❑ Masham	80
❑ Mule	80
❑ Scotch Halfbred	88
❑ Welsh Halfbred	72
❑ Welsh Mule	78

Adjustments for producing lambs at fat class 2

If leaner lambs are required a 10 per cent reduction in slaughter weight will produce fat class 2. Similar adjustments need to be made to take account of the sex of the lambs and the management system.

A regular weighing routine is essential to ensure that individual lambs from the flock are matched to the set targets.

		% adjustment to slaughter weight
Fat class	3L	-5
	2	-10
Sex	Ewe	-10
	Wether	+5
Finishing system	Intensive	-5
	Store period	+5

Predicting carcase weights at fat class 3 from breed liveweights

	Suffolk x Welsh Halfbred (kg)	Suffolk x Mule (kg)
Breed liveweight of adult ram	91	91
Breed liveweight of adult ewe	72	80
Thus potential adult weight	82	86
Predicted slaughter liveweight of lamb (fat class 3L/3H borderline)	41	43
Carcase weight (48 per cent killing-out)	19.5	20.5

Breeding Stock

Although saleable meat yield is influenced mostly by fat class, meat traders express clear preferences for good conformation lambs – a factor mostly determined by breeding. Careful choice of breeding stock of blocky conformation will increase opportunities for improvement. Producers purchasing crossing rams to mate with half-bred ewes are in the best position to influence the conformation of their lamb crop through careful ram selection.

If preference is given to Signet Sheepbreeder recorded flocks when choosing rams, even greater benefits will be gained. The majority of these flocks use modern ultrasonic scanning equipment to evaluate their stock and produce lean indices which are available to prospective purchasers.

The move towards leaner market specifications results in lighter slaughter weights for a similar type of lamb, reducing overall lamb returns. This loss can be overcome with the purchase of recorded rams with high lean indices which have the potential to produce lean lambs of acceptable carcase weights.

Action of producers

- ❑ Select breeding stock carefully
- ❑ Buy Signet-recorded rams
- ❑ Plan target slaughter weights
- ❑ Weigh lambs regularly
- ❑ Handle carefully to assess fat levels
- ❑ Monitor selection against MLC classification results

Other titles available in this series:

Sheep Management Matters

No 1 Getting Ready for Tupping

No 2 Keeping Lambs Alive

No 3 Lambing Outdoors

No 4 Sheep Health Matters

No 5 Essential Sheep-dog Matters

No 6 Rearing Entire Male Lambs

No 7 Keeping Sheep Clean

No 8 Planned Carcase Production

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